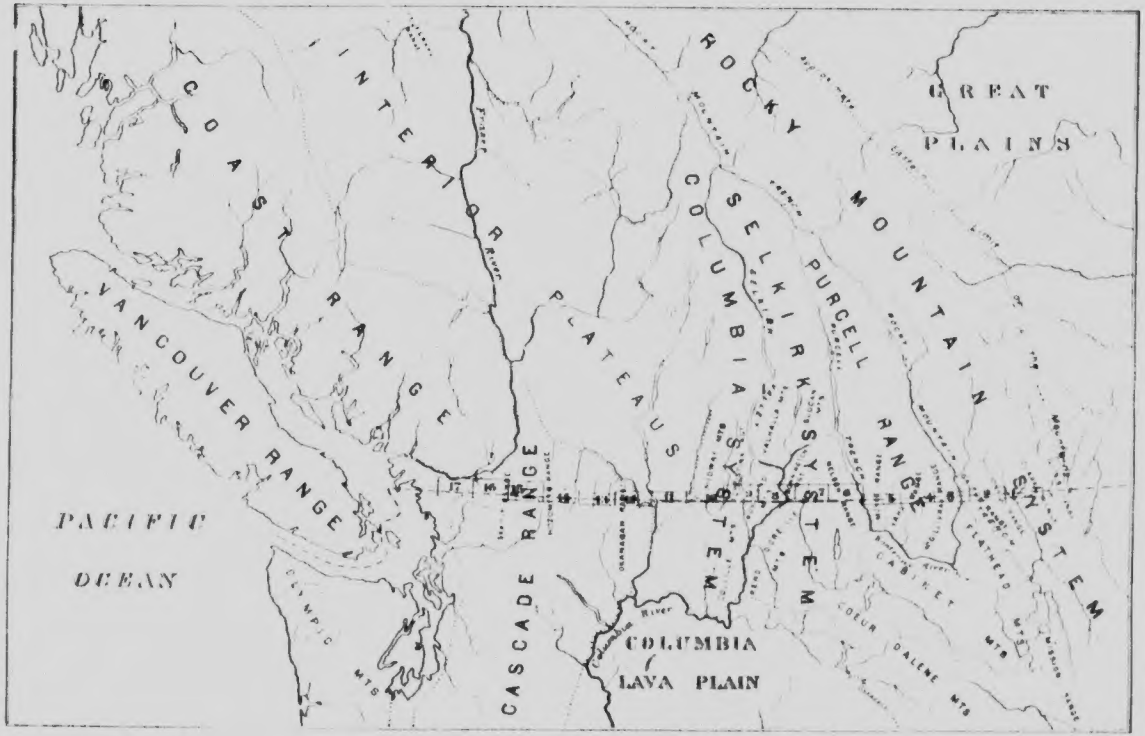


KEY SHOWING POSITION OF SHEETS

Sheet 1—Clarke Ran
" 2—Galton Ra
" 3—Rocky Mou[illegible]ench.
" 4—Yahk Range
" 5—Moyie Range.
" 6—Purcell Trench.
" 7—Pend D'Oreille River.
" 8 -Rossland Mountains.
" 9—Christina Lake.
Sheet 10—Midway Mountains,
" 11—Osoyoos Lake.
" 12—Kruger Mountain.
" 13—Okanagan Range.
" 14—Hozomeen Range.
" 15—Skagit Range.
" 16—Chilliwack River.
" 17—Sumas Lake.

Plate 72—Views of the Rocky and Selkirk Ranges.
" 73—Views of the Selkirk, Columbia and Cascade Ranges.
—Erratum Sheet.

ERRATA

Appendix 6

Report of the Chief Ast

Part III—ma

Sheet 17.—Boundary Monument			19 is 0.94 miles west of Mon. 20
" 15.—	"	"	59 is 1 02 " " " 60
" 10.—	"	"	144 should be deleted
	"	"	145 should read 144
	"	"	146 " " 145
	"	"	147 " " 146
	"	"	148 " " 147
	"	"	149 " " 148
	"	"	150 " " 149
	"	"	151 " " 150
	"	"	152 " " 151
	"	"	153 " " 152
	"	"	154 " " 153
	"	"	155 " " 154
Sheet 9.—	"	"	156 " " 155
	"	"	157 " " 156
	"	"	158 " " 157
	"	"	159 " " 158
	"	"	160 " " 159
	"	"	161 " " 160
	"	"	162 " " 161
	"	"	163 " " 162
	"	"	164 " " 163
	"	"	165 " " 164
	"	"	165 is a few yards east of the railway track near Laurier.
Sheet 5.—	"	"	207 is 2.72 miles west of Mon. 208
	"	"	207 should read 208
	"	"	208 " " 209
	"	"	209 " " 210
	"	"	210 " " 211
	"	"	211 " " 212
	"	"	212 " " 213
	"	"	213 " " 214
	"	"	214 " " 215
	"	"	215 " " 216
	"	"	216 " " 217
	"	"	218 is 0.02 miles east of Mon. 217
	"	"	217 should read 219
	"	"	218 " " 220
	"	"	219 " " 221
	"	"	220 " " 222
Sheet 4.—	"	"	221 " " 223
	"	"	222 " " 224
	"	"	223 " " 225
	"	"	224 " " 226
	"	"	225 " " 227

Sheet
(conti

Sheet

Sheet

Sheet

RRATA
pendix 6.
Chief Astronomer 1910
III—maps

Sheet 4.— (continued)	Boundary	Monument 226	should read 228
	"	" 227	" " 229
	"	" 228	" " 230
	"	" 229	" " 231
	"	" 230	" " 232
	"	" 231	" " 233
	"	" 232	" " 234
	"	" 233	" " 235
	"	" 234	" " 236
Sheet 3.—	"	" 235	" " 237
	"	" 236	" " 238
	"	" 237	" " 239
	"	" 238	" " 240
	"	" 239	" " 241
	"	" 240	" " 242
	"	" 241	" " 243
	"	" 244 is 0.22 miles west of Mon. 245	
	"	" 242	should read 245
	"	" 243	" " 246
	"	" 244	" " 247
Sheet 2.—	"	" 245	" " 248
	"	" 246	" " 249
	"	" 247	" " 250
	"	" 248	" " 251
	"	" 252 is 1.35 miles east of Mon. 251	
	"	" 249	should read 253
	"	" 250	" " 254
	"	" 251	" " 255
	"	" 252	" " 256
	"	" 257 is 2.59 miles east of Mon. 256	
	"	" 253	should read 258
	"	" 259 is 2.14 miles east of Mon. 258	
Sheet 1.—	"	" 254	should read 260
	"	" 255	" " 261
	"	" 256	" " 262
	"	" 257	" " 263
	"	" 258	" " 264
	"	" 259	" " 265
	"	" 260	" " 266
	"	" 261	" " 267
	"	" 262	" " 268
	"	" 269 is 0.94 miles west of Mon. 270	
	"	" 263	should read 270
	"	" 264	" " 271
	"	" 265	" " 272
	"	" 273 is 1.16 miles east of Mon. 272	

SHEET 1. CLAR

ERRATA

Boundary Monument 255 should read 261
" " 256 " " 262
" " 257 " " 263
" " 258 " " 264
" " 259 " " 265
" " 260 " " 266
" " 261 " " 267
" " 262 " " 268
" " 269 is 0.94 miles we
" " 263 should read 270
" " 264 " " 271
" " 265 " " 272
" " 273 is 1.16 miles eas

CLARKE RANGE

read 261
" 262
" 263
" 264
" 265
" 266
" 267
" 268
miles west of Mon. 270
read 270
" 271
" 272
miles east of Mon. 272

LEGEND

PLEISTOCENE & RECENT

Glacial drift and alluvium
including winged-out moraines of the Flathead valley

MIOCENE

Ks — **Kishenehn formation**
chiefly bluish-grey clays; interbeds of grey sandstone; fossiliferous

chiefly MIDDLE CAMBRIAN(?)

Kn — **Kintla formation**
chiefly thin-bedded, red, argillite; and interbedded flow of basic lava

Sh — **Sheppard formation**
chiefly thin-bedded, light grey, siliceous dolomite, an interbedded flow of basic lava

Pu — **Purcell lava**
massive, basic flow

Si — **Siyeh formation**
chiefly massive, dark grey, siliceous magnesian limestone; also much greenish-grey metargillite

LOWER CAMBRIAN(?)

Gr — **Grinnell formation**
chiefly thin-bedded, red metargillite, an interbedded flow of basic amygdaloid

Appekunny formation
mainly thin-bedded, light greenish-grey metargillite; subordinate quartzite and magnesian limestone lenses

BELTIAN

A — **Altyn formation**
thin to thick-bedded, light grey, generally sandy, siliceous, magnesian limestone; bearing fossil, Beltina danai.

Wt — **Waterton formation**
massive, dark grey, "felspathized" dolomite

CAMBRIAN(?)

Intrusive

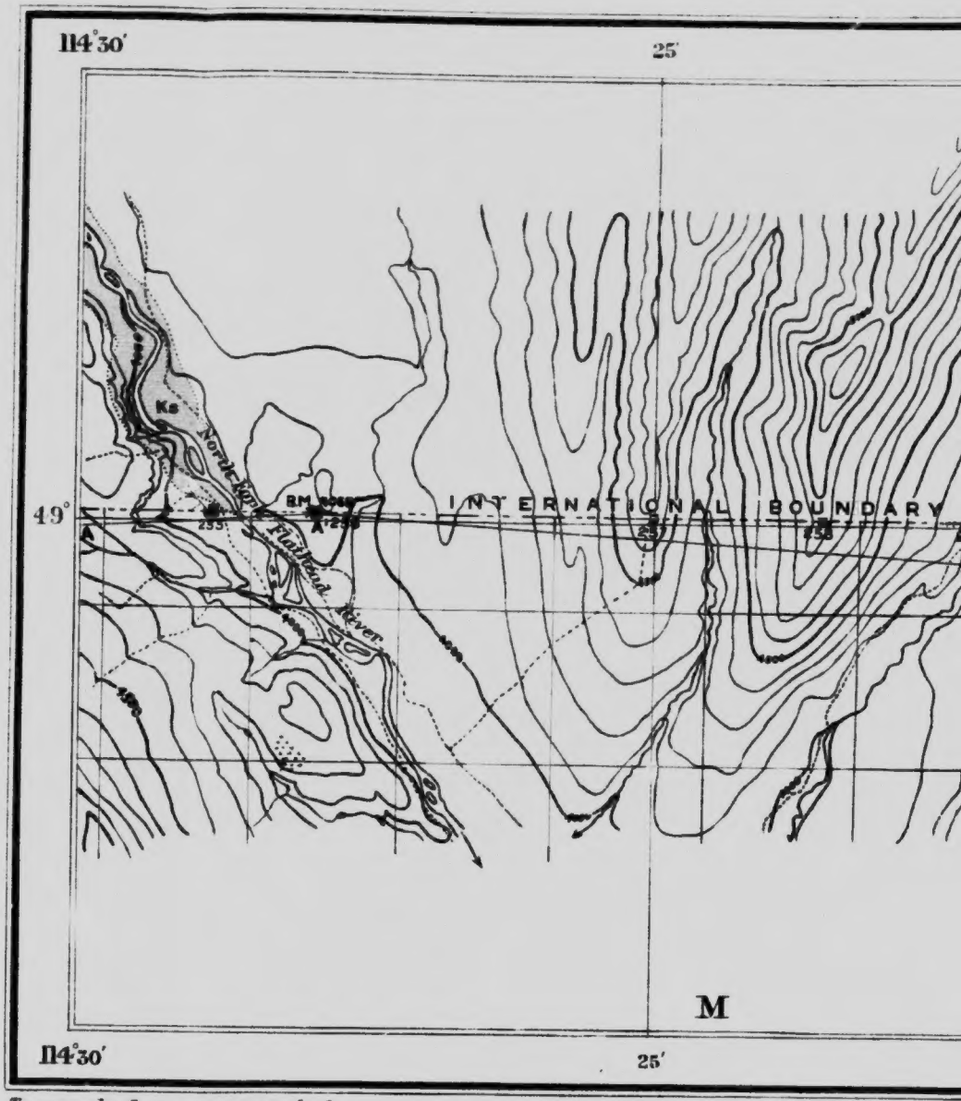
Abnormal Gabbro

Symbols

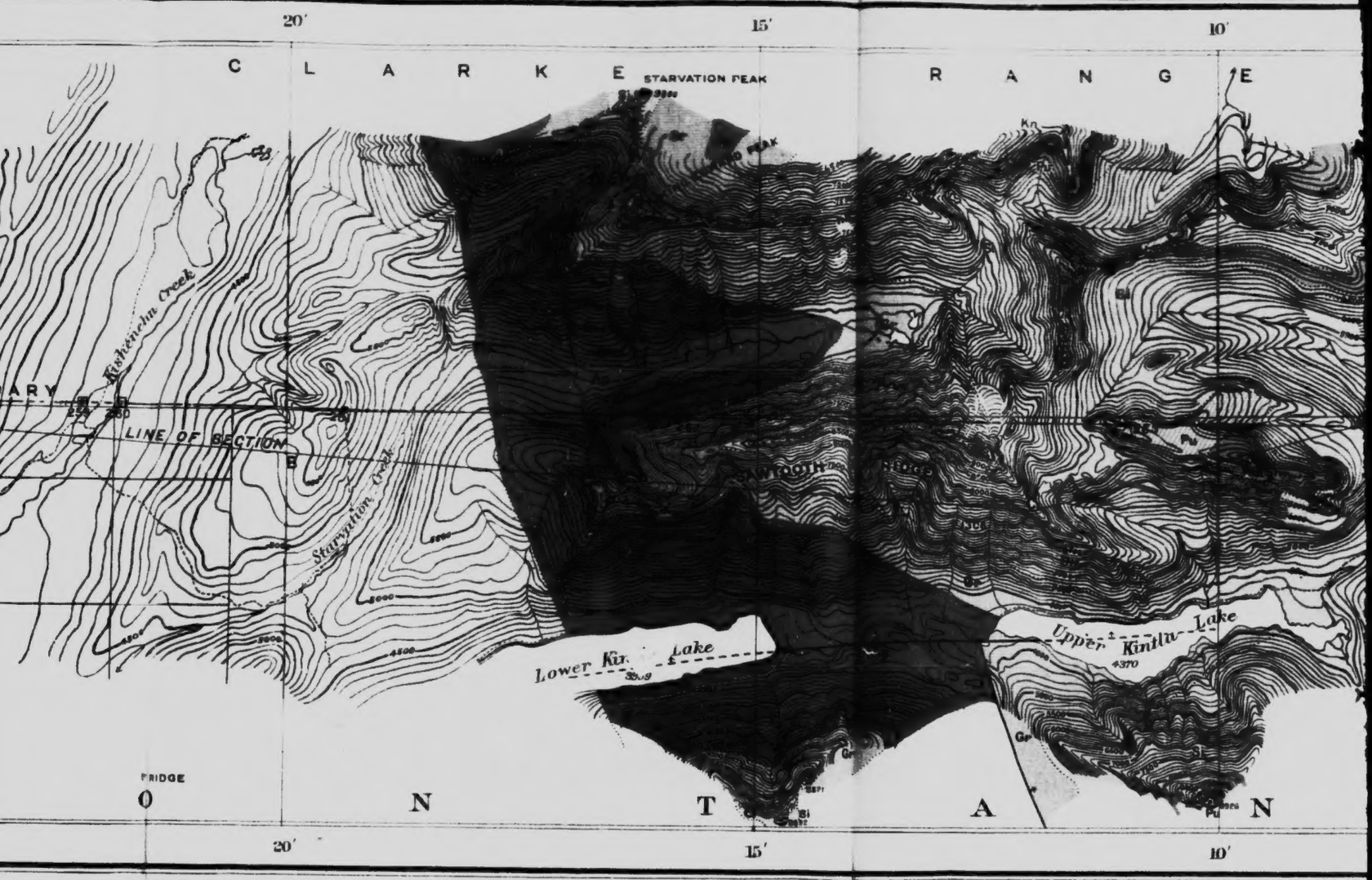
Geological boundary

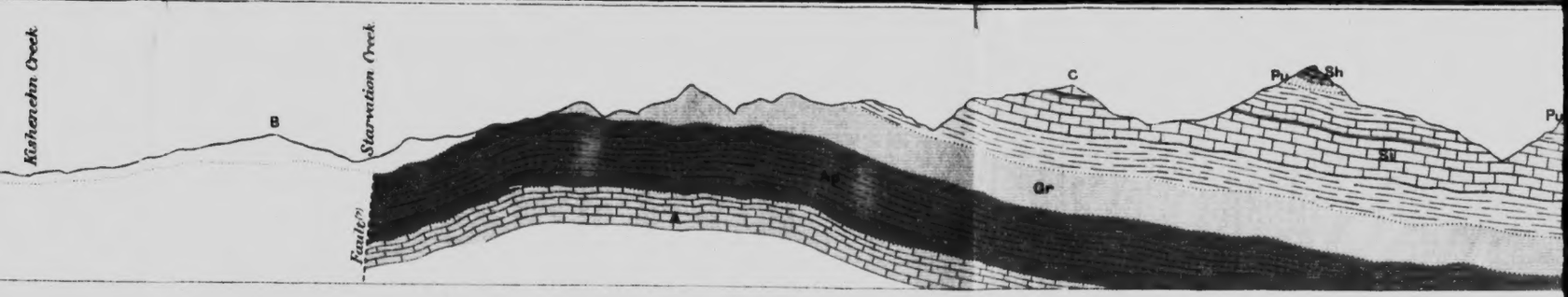
Fault

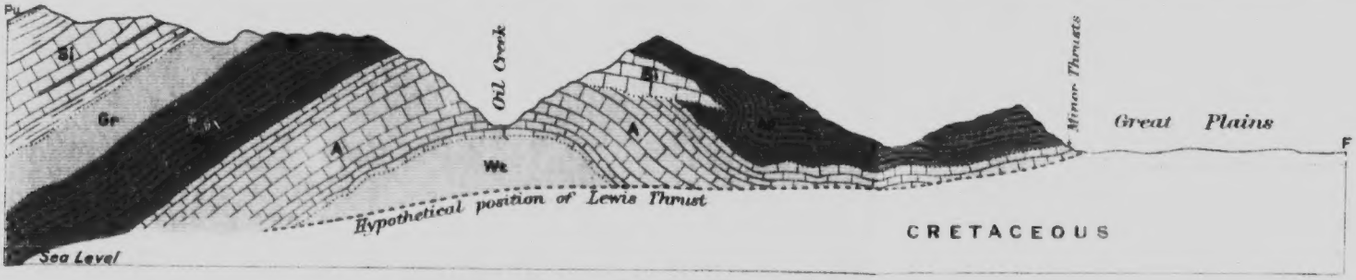
Note. *Localities of chemically analysed rocks, shown thus,* + 1306



Topography from surveys made by the Boundary Commission.







Sections along line AA'BCDEF

GEOLOGY OF THE FORTY-NINTH PARALLEL, By R. A. Daly.

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet

15′ 10′ 5′

ARVATION PEAK

R A N G E

BRITISH COLUMBIA ALBERTA

PROVINCIAL BOUNDARY

Line of Section

Summit Lake

49°

SAWTOOTH RIDGE

Upper Kintla Lake

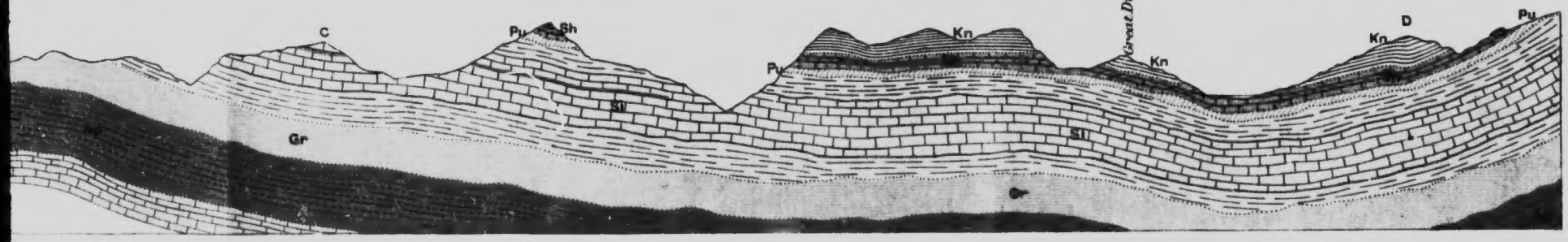
Lake

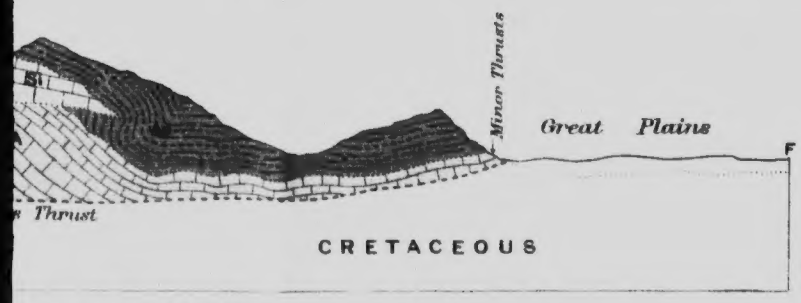
GREAT DIVIDE

T A N A

15′ 10′ 5′

1260





MAP 74 A

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ong line AA'BCDEF

NINTH PARALLEL. By R.A.Daly.

4 Statute Miles to 1 Inch

Miles

nterval 100 feet

SHEET 2 - GALTO

Bou

ERRATA

Boundary Monument 245 should read 248
" " 246 " " 249
" " 247 " " 250
" " 248 " " 251
" " 252 is 1.35 miles east of Mon. 251
" " 249 should read 253
" " 250 " " 254
" " 251 " " 255
" " 252 " " 256
" " 257 is 2.59 miles east of Mon. 256
" " 253 should read 258
" " 259 is 2.14 miles east of Mon 258
" " 254 should read 260

LEGEND

PLEISTOCENE & RECENT

Glacial drift and alluvium

MISSISSIPPIAN & DEVONIAN MIOCENE

Ks — Kishenehn formation
chiefly bluish-grey clay; interbeds of grey sandstone; fossiliferous

Limestone
massive, grey, fossiliferous

MIDDLE chiefly CAMBRIAN(?)

R — Roosville formation
light green and grey, thin-bedded waterylite

P — Phillips formation
purplish to red, thin-bedded waterylite & quartzite

G — Gateway formation
chiefly thin-bedded, siliceous waterylite, some dolomite at base

Pu — Purcell lava
massive, basic flow

Si — Siyeh formation
massive, dark grey, siliceous magnesian limestone with much greenish-grey waterylite

LOWER CAMBRIAN(?)

W — Wigwam formation
thin-to-thick-bedded red sandstone and waterylite

Mc — MacDonald formation
thin to thick-bedded, grey waterylite, with rare lenses of dolomite

H — Hefty formation
chiefly thick-bedded, reddish sandstone

A — Altyn formation
thin-bedded siliceous dolomite

CAMBRIAN(?) BELTIAN

Intrusive

Abnormal gabbro

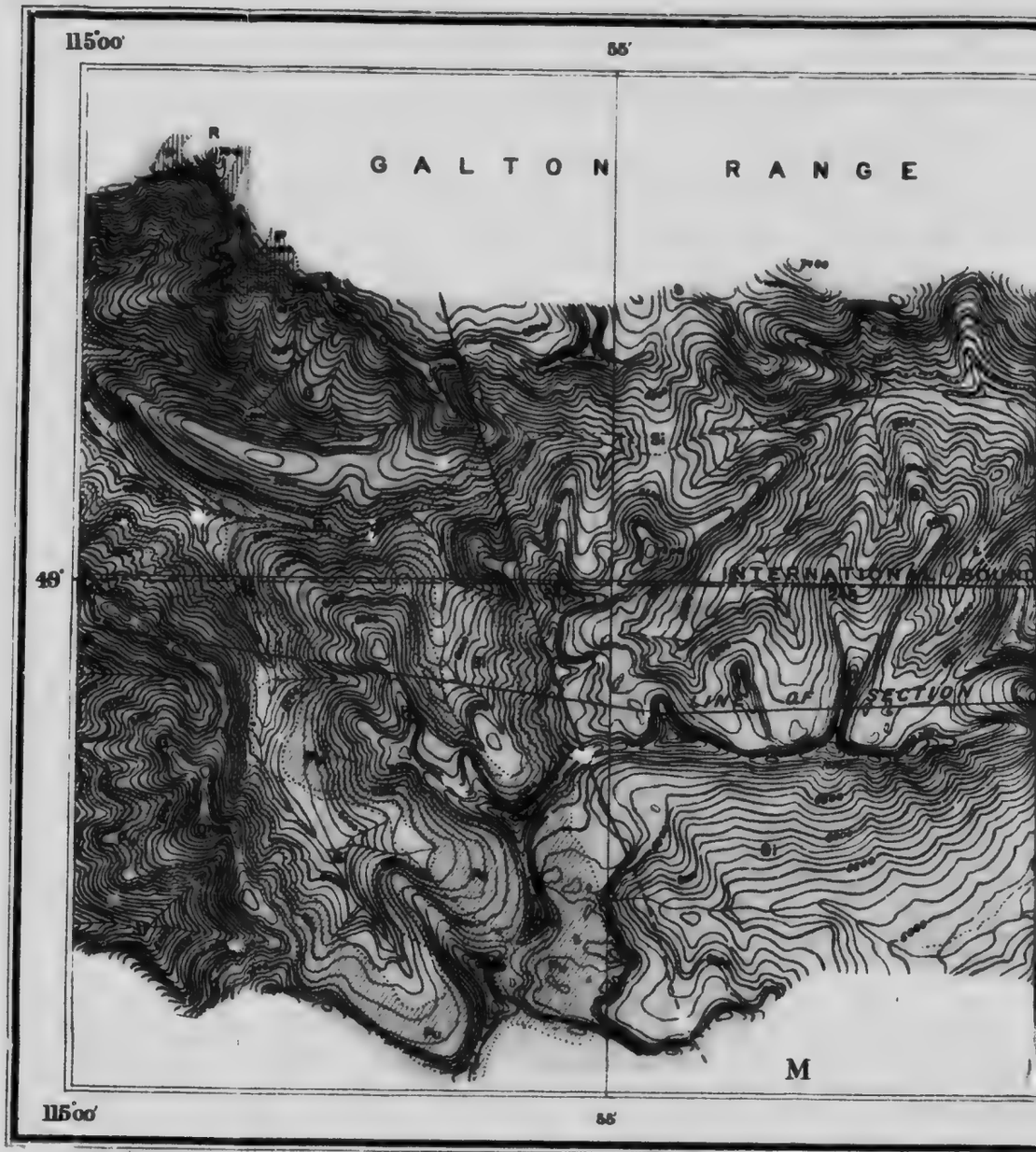
Symbols

Geological boundary

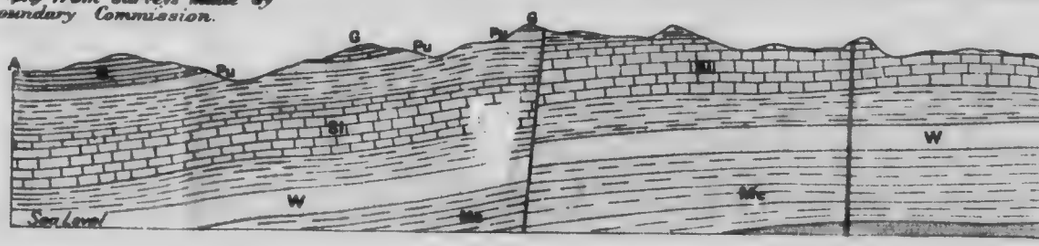
Fault

Glacial Striae

Note. *Localities of chemically analysed rocks shown thus,* +1250



...phy from surveys made by ...oundary Commission.



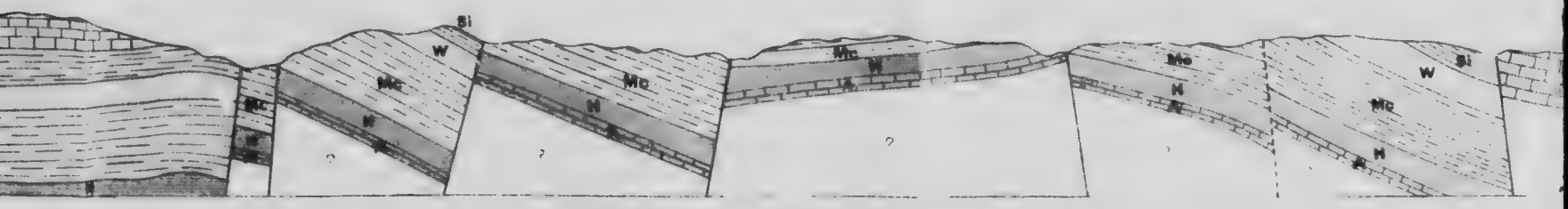
50′ 45′ 40′

MACDONALD RANGE

Wigwam River

ONTA N

50′ 45′ 40′



Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R.A. Daly.

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 inch

Miles

1 ½ 0 1 2 3 4

Contour interval. 100 feet

45′ 40′ 35′ 114°30′

A C D O N A L D R A N G E

Flathead River

49°

T A N A

45′ 40′ 35′ 114°30′

1261

along line A B

Sea Level

Y-NINTH PARALLEL. By R.A. Daly.

9864 Statute Miles to 1 Inch

Miles

2 3 4

ur interval 100 feet

MAP 75A

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SHEET 3.—ROCKY MO

Boundary M
"
"
"
"
"
"
"
"
"
"

Y MOUNTAIN TRENCH

ERRATA

ndary Monument 235 should read 237
" " 236 " " 238
" " 237 " " 239
" " 238 " " 240
" " 239 " " 241
" " 240 " " 242
" " 241 " " 243
" " 244 is 0.22 miles west of Mon. 245
" " 242 should read 245
" " 243 " " 246
" " 244 " " 247

LEGEND

PLEISTOCENE & RECENT

Glacial drift and alluvium

DEVONIAN (?)

Limestone and quartzite
massive limestone fossiliferous

Chiefly MIDDLE CAMBRIAN (?)

G
Gateway formation
chiefly thin-bedded, siliceous metargillite some dolomite at base

Pu
Purcell lava
massive, basic flows

Si
Siyeh formation
thin-to-thick-bedded, greenish grey metargillite, with massive, siliceous, magnesian limestone

LOWER CAMBRIAN (?)

W
Wigwam formation
thin-to-thick-bedded, red sandstone and metargillite

Mc
MacDonald formation
thin-to-thick-bedded, grey metargillite

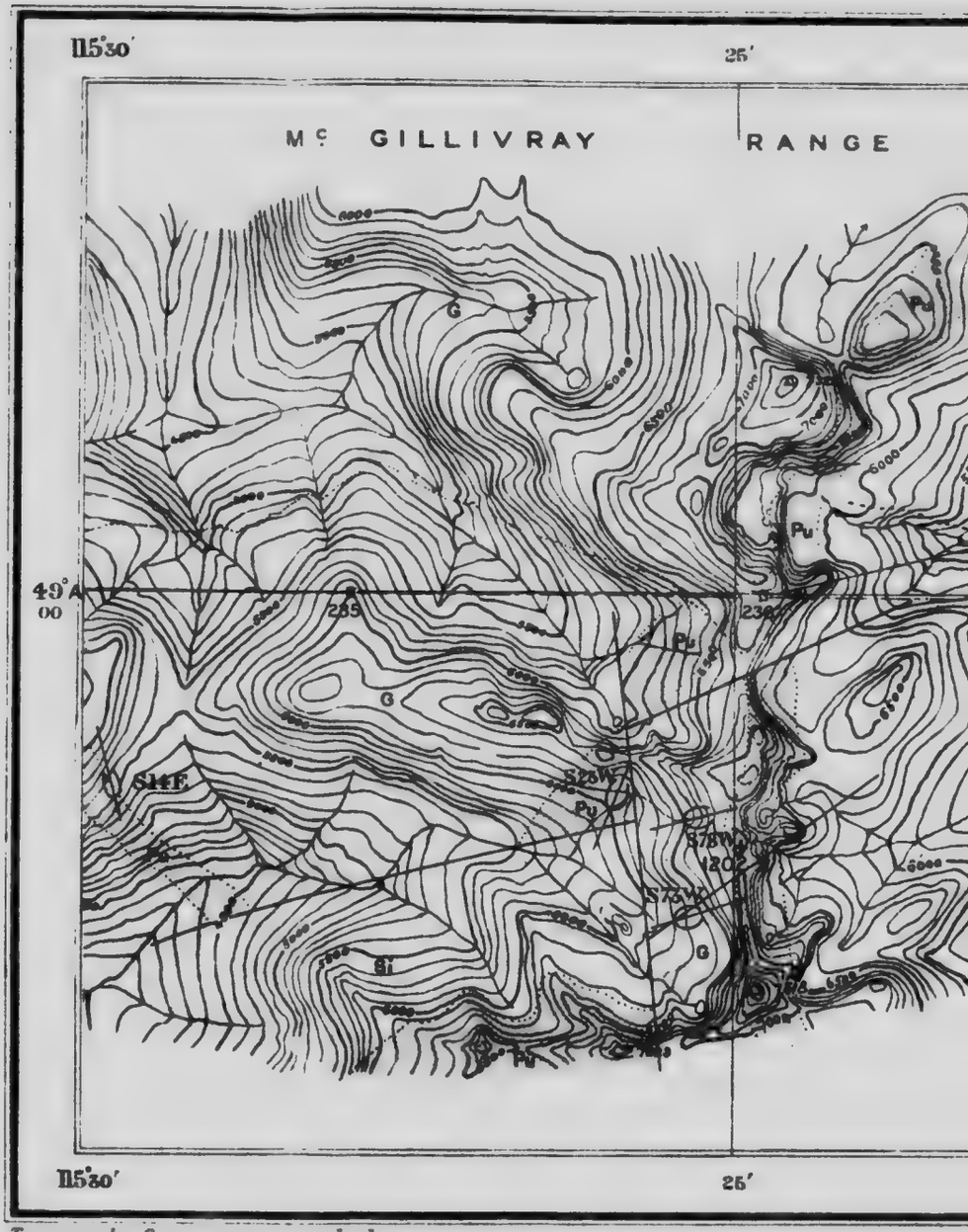
Symbols

Geological boundary

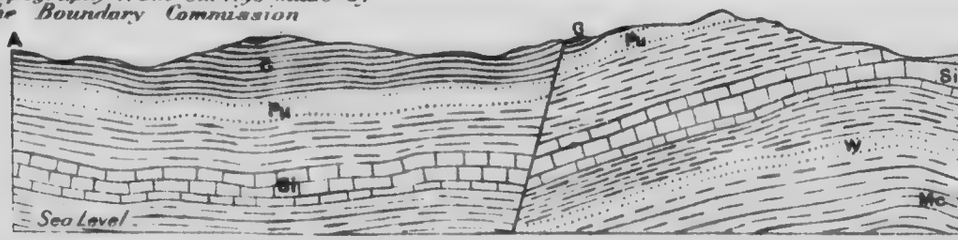
Fault

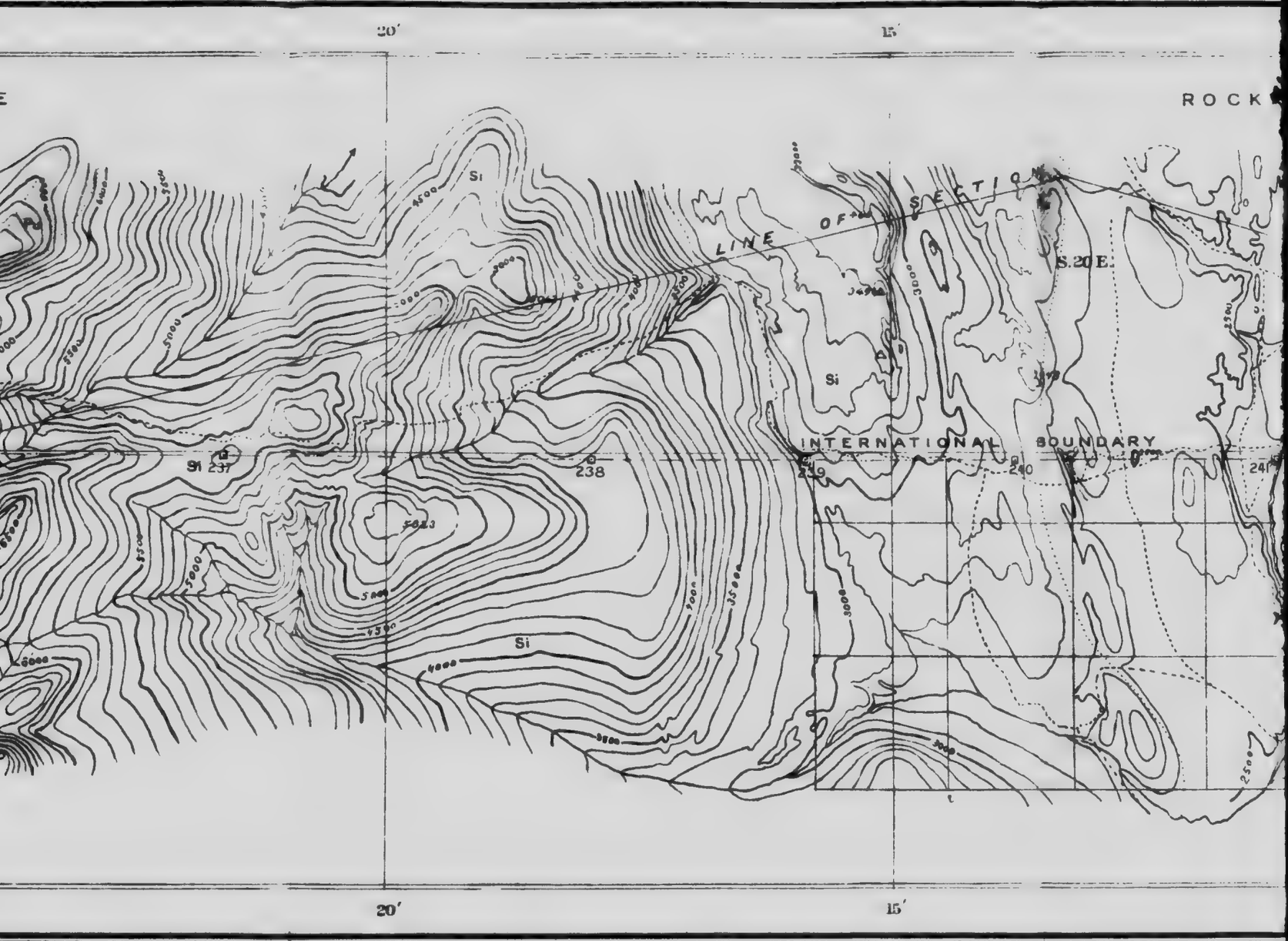
Glacial striae

Note. *Localities of chemically analyzed rocks, shown thus,* +1202



Topography from surveys made by the Boundary Commission





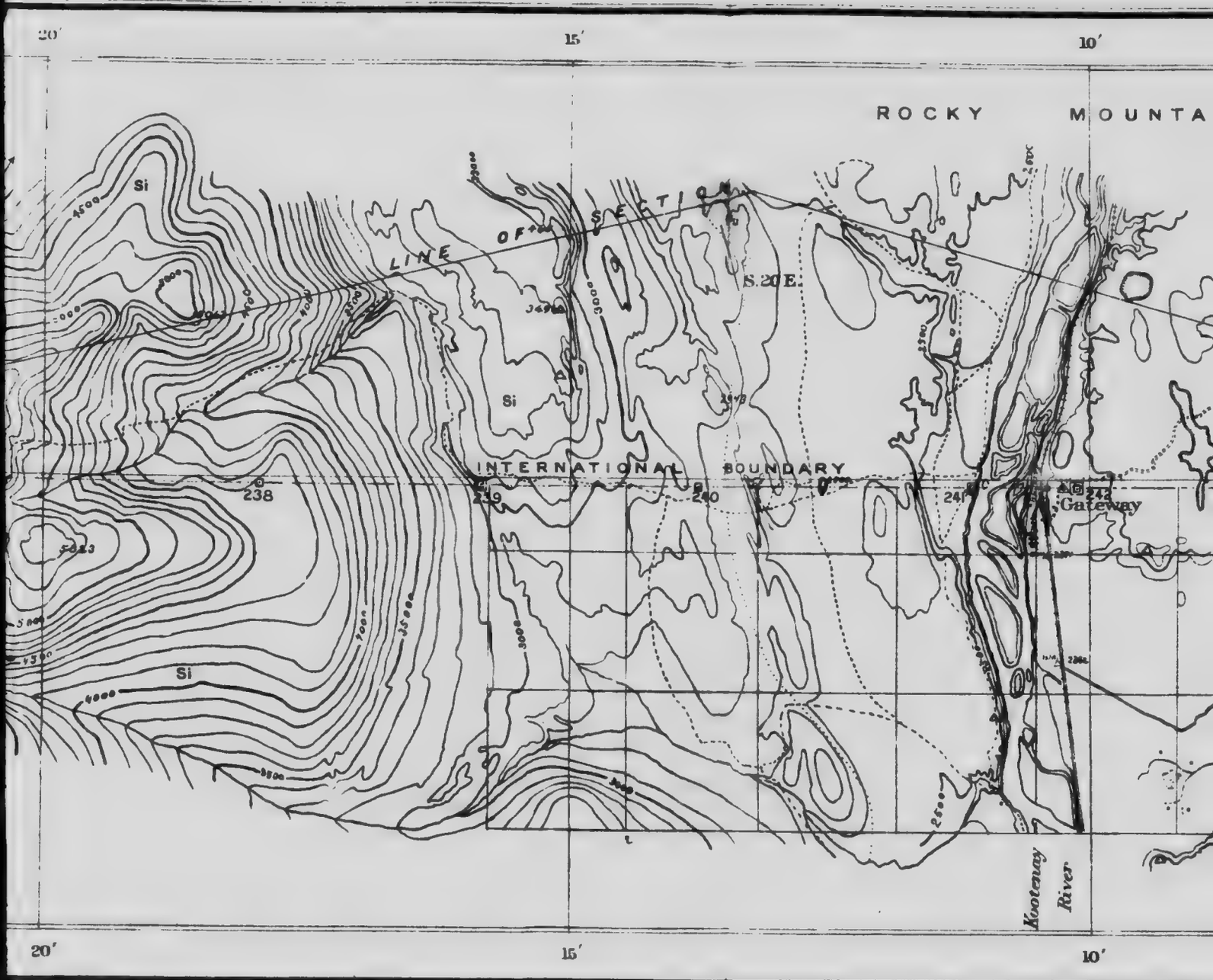
Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R.A.

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 Inch

Miles

Contour interval 100 feet



Section along line A B

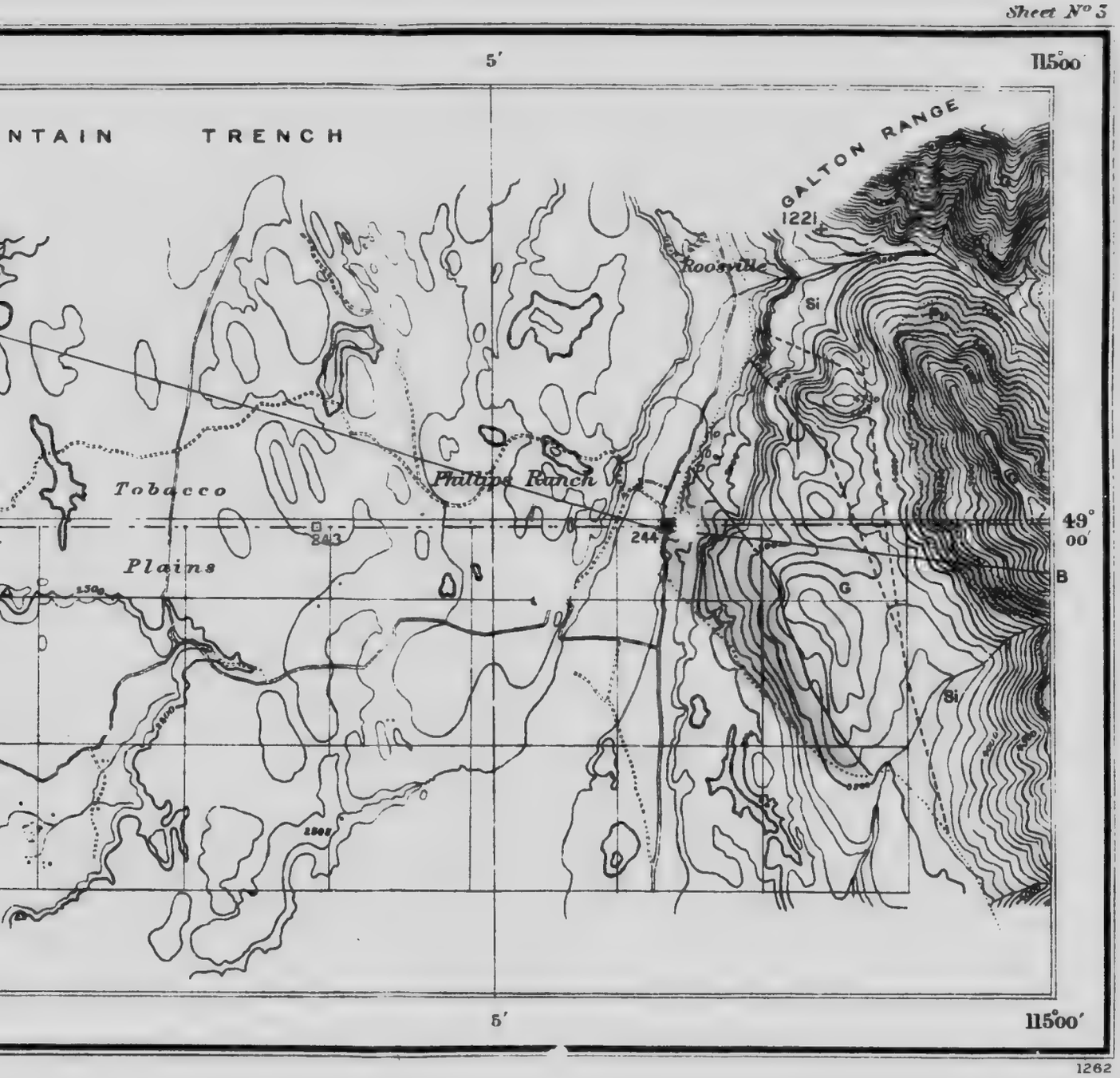
GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 Inch

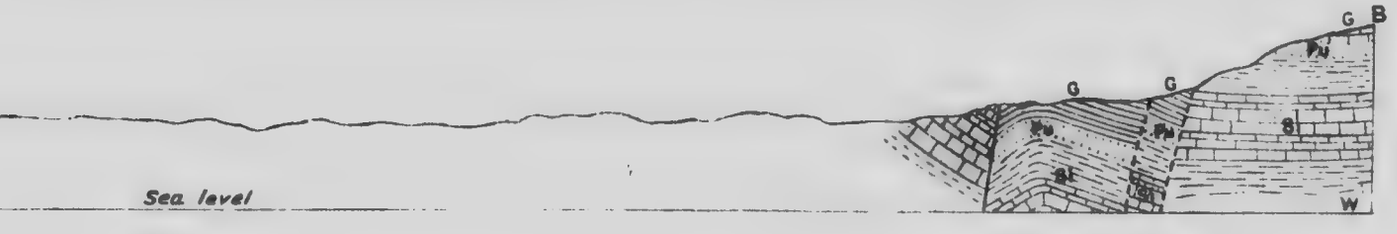
Miles

1 ½ 0 1 2 3 +

Contour interval, 100 feet



1262



MAP 76 A

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SHEET 4.—YAKH

Bounda
"
"
"
"
"
"
"
"
"
"
"
"

YAKH RANGE

ERRATA

Boundary	Monument	221	should read		223
"	"	222	"	"	224
"	"	223	"	"	225
"	"	224	"	"	226
"	"	225	"	"	227
"	"	226	"	"	228
"	"	227	"	"	229
"	"	228	"	"	230
"	"	229	"	"	231
"	"	230	"	"	232
"	"	231	"	"	233
"	"	232	"	"	234
"	"	233	"	"	235
"	"	234	"	"	236

LEGEND

Chiefly MIDDLE CAMBRIAN (?)

M
Moyie formation
thin to thick-bedded shales, metargillites and quartzites; white, grey, blackish, greenish & purplish

G
Gateway formation
chiefly thin-bedded, siliceous metargillites; some dolomite at base. (Equivalent of lower part of Moyie formation)

Pu
Purcell lava
massive basic flows

Kt
Kitchener formation
thin-to thick-bedded greenish-grey quartzite and metargillite; somewhat dolomitic in places

Si
Siyeh formation
thin-to thick-bedded, greenish-grey metargillite, with massive, siliceous, magnesian limestone (Equivalent to up. Kitchener formation)

(?) LOWER CAMBRIAN (?) & BELTIAN CAMBRIAN (?)

W
Wigwam formation
thin-to-thick-bedded, red sandstone and metargillite (Equivalent of lower part of Kitchener formation)

C
Creston formation
generally thick-bedded grey quartzite and metargillite; sometimes dolomitic

CAMBRIAN (?)

Intrusive

Abnormal hornblende gabbro

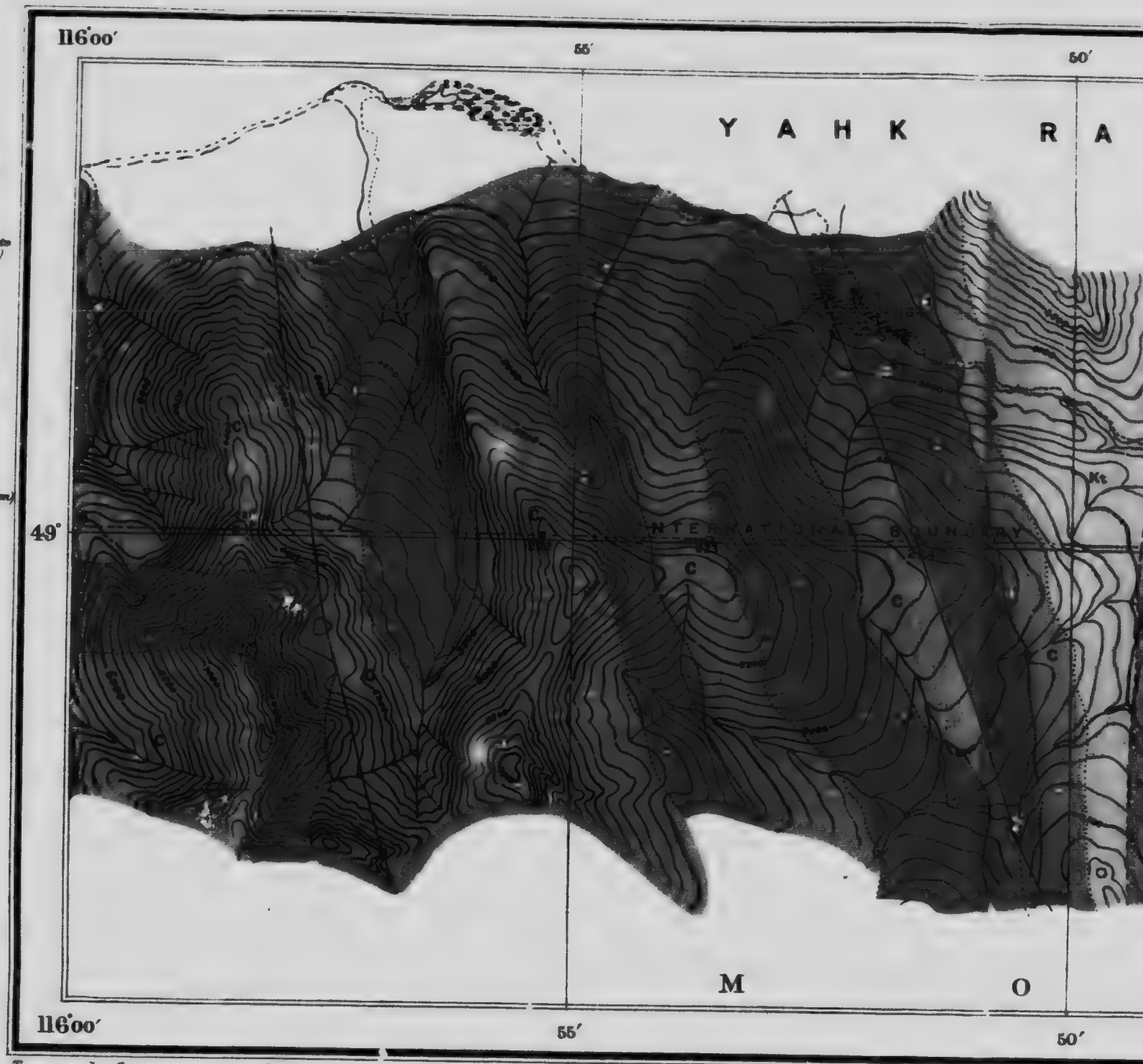
Symbols

Geological boundary

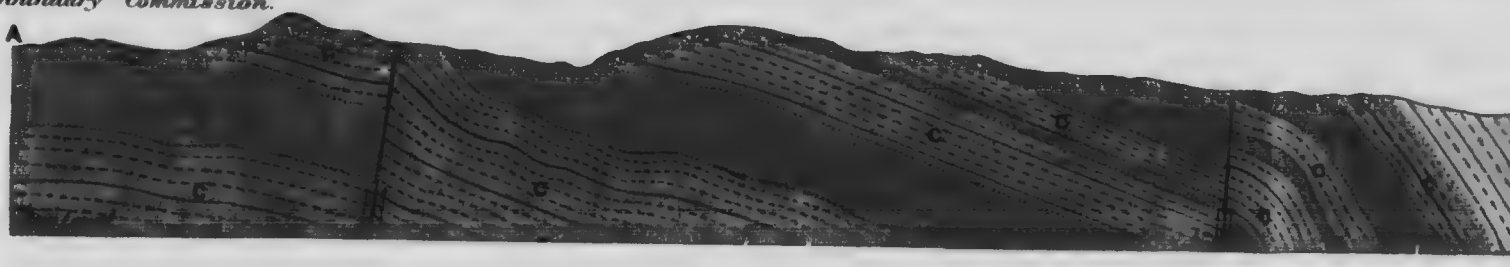
Fault

Glacial striae

Note. *Localities of chemically analyzed rocks, shown thus, + 1164*



Topography from surveys made by the Boundary Commission.



GEO

A N G E

N T A

W. Fork Yakk River

45′

Section on line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL, By R.A. Daly

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 inch

Miles

1 ½ 0 1 2 3 4

Contour interval, 100 feet

N T A

45′

Section on line A B

F THE FORTY-NINTH PARALLEL, By R.A.D

Scale: $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 inch

Miles

½ 0 1 2 3 4

Contour interval, 100 feet

40′ 35′ 115°30′

Mc GILLIVRAY RANGE

49°

Yahk River

A N A

40′ 35′ 115°30′

1263

Yahk River

EL. By R.A. Daly.

MAP 77 A

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SHEET 5. M

Boundary M
"
"
"
"
"
"
"
"
"
"
"
"
"
"
"

5. MOYIE RANGE

ERRATA

ndary Monument 207 is 2.72 miles west of Mon 208
" " 207 should read 208
" " 208 " " 209
" " 209 " " 210
" " 210 " " 211
" " 211 " " 212
" " 212 " " 213
" " 213 " " 214
" " 214 " " 215
" " 215 " " 216
" " 216 " " 217
" " 218 is 0.02 miles east of Mon. 217
" " 217 should read 219
" " 218 " " 220
" " 219 " " 221
" " 220 " " 222

LEGEND

CAMBRIAN(?) | L.ᵒᵉ CAMBRIAN & BELTIAN(?) | chiefly L.ᵒᵉ CAMBRIAN & MIDDLE CAMBRIAN(?) | RECENT

Alluvium

M

Moyie formation
thin-to thick-bedded shales metargillite and quartzite: white, grey, blackish, greenish & purplish

Kt

Kitchener formation
thin-to thick-bedded, greenish-grey quartzite and interbedded metargillite

C

Creston formation
massive to thin-bedded, grey quartzite and subordinate metargillite

Intrusive

Abnormal hornblende gabbro

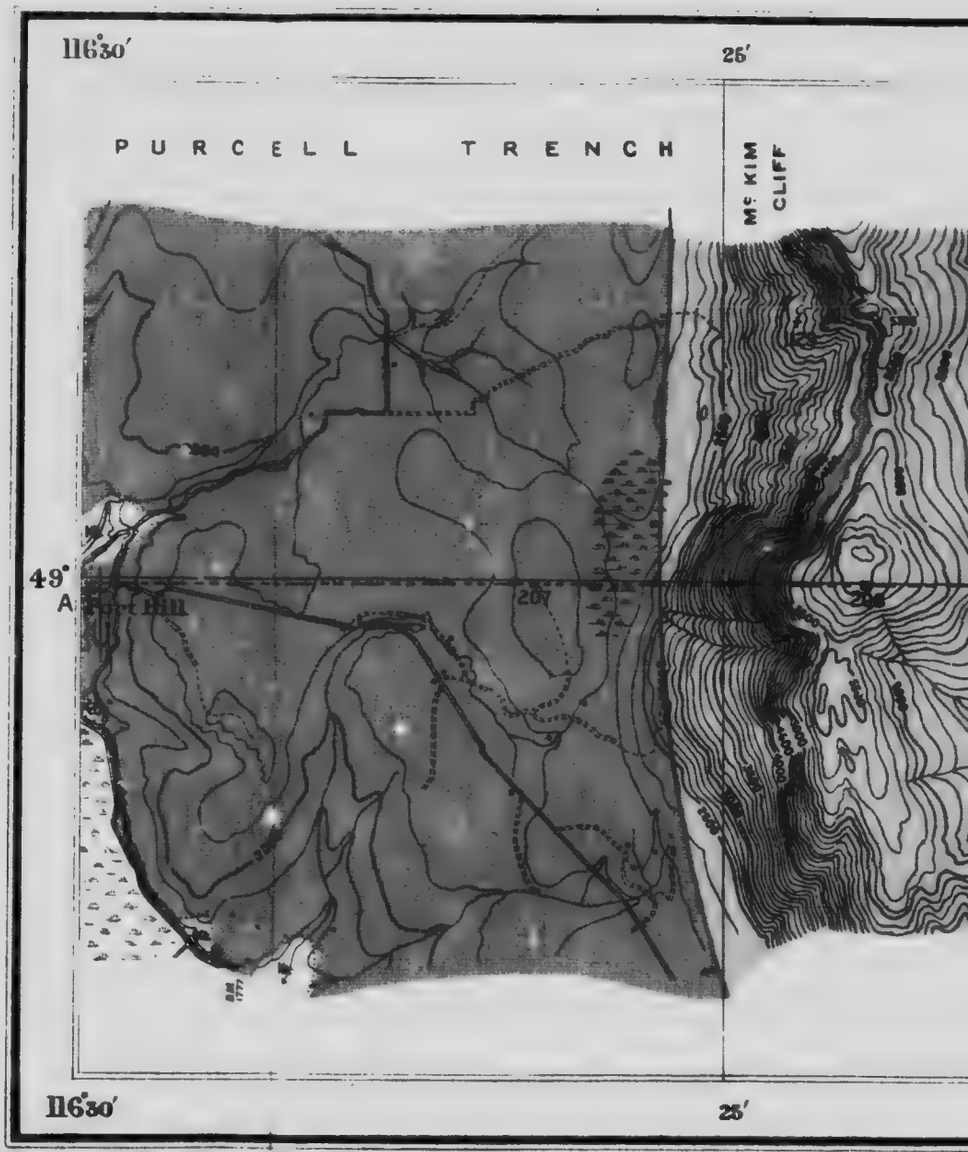
Symbols

Geological boundary

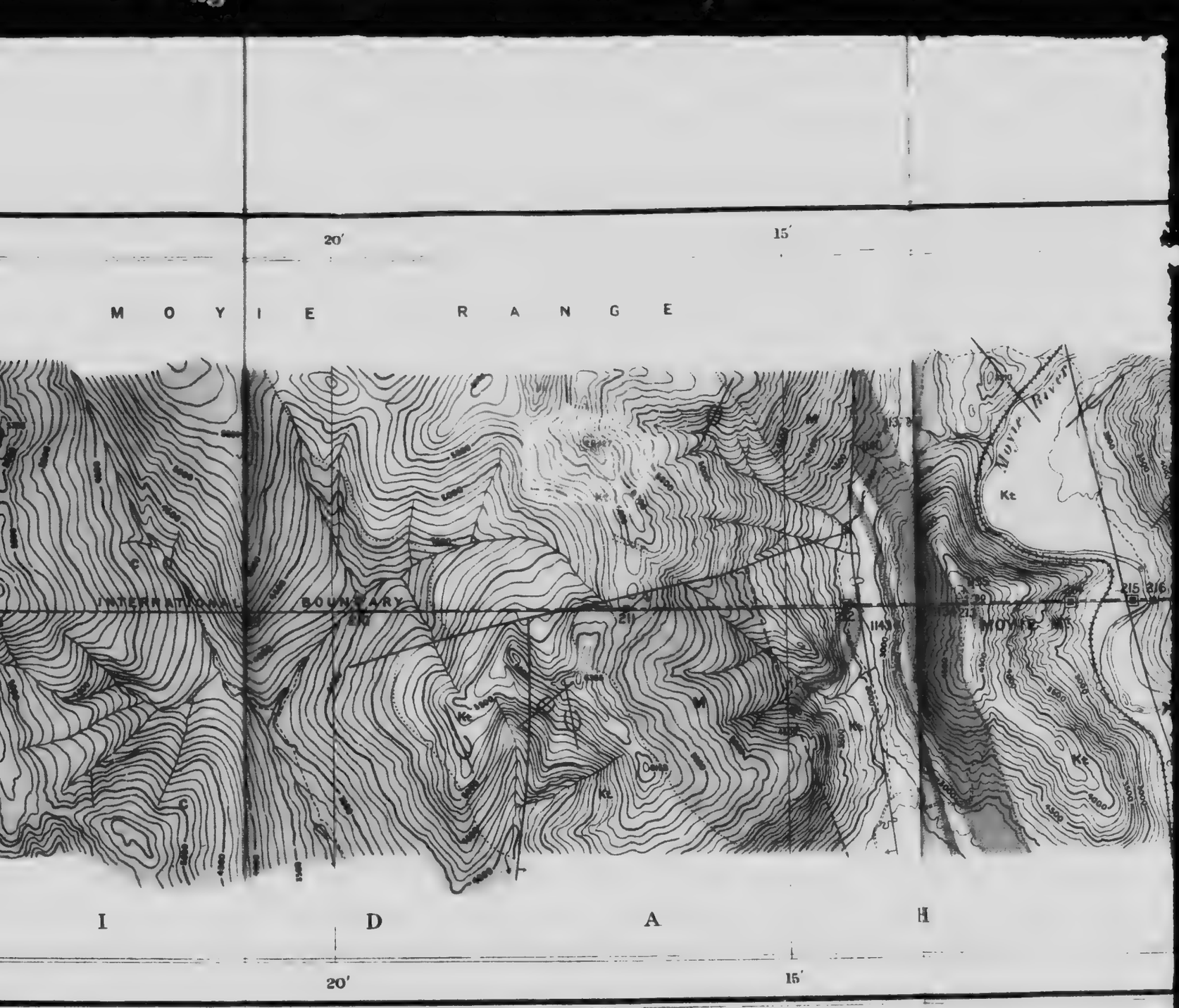
Fault

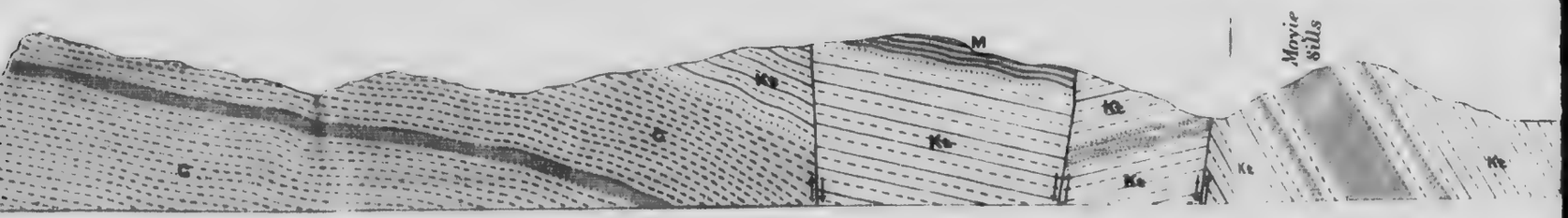
Glacial striae

Note. *Localities of chemically analyzed rocks, shown thus.* +H34



Topography from surveys made by the Boundary Commission.





Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. D

Scale $\frac{1}{62500}$ = 0·9864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet

15′ 10′ 5′ 116°00′

Y A H K R A N G E

Moyie River

Ke

LINE OF SECTION

MONTANA

H O

15′ 10′ 5′ 116°00′

1264

Moyie sills

Moyie River

along line A B

NINTH PARALLEL. By R. A. Daly.

Statute Miles to 1 Inch

Miles

erval. 100 feet

MAP 78A

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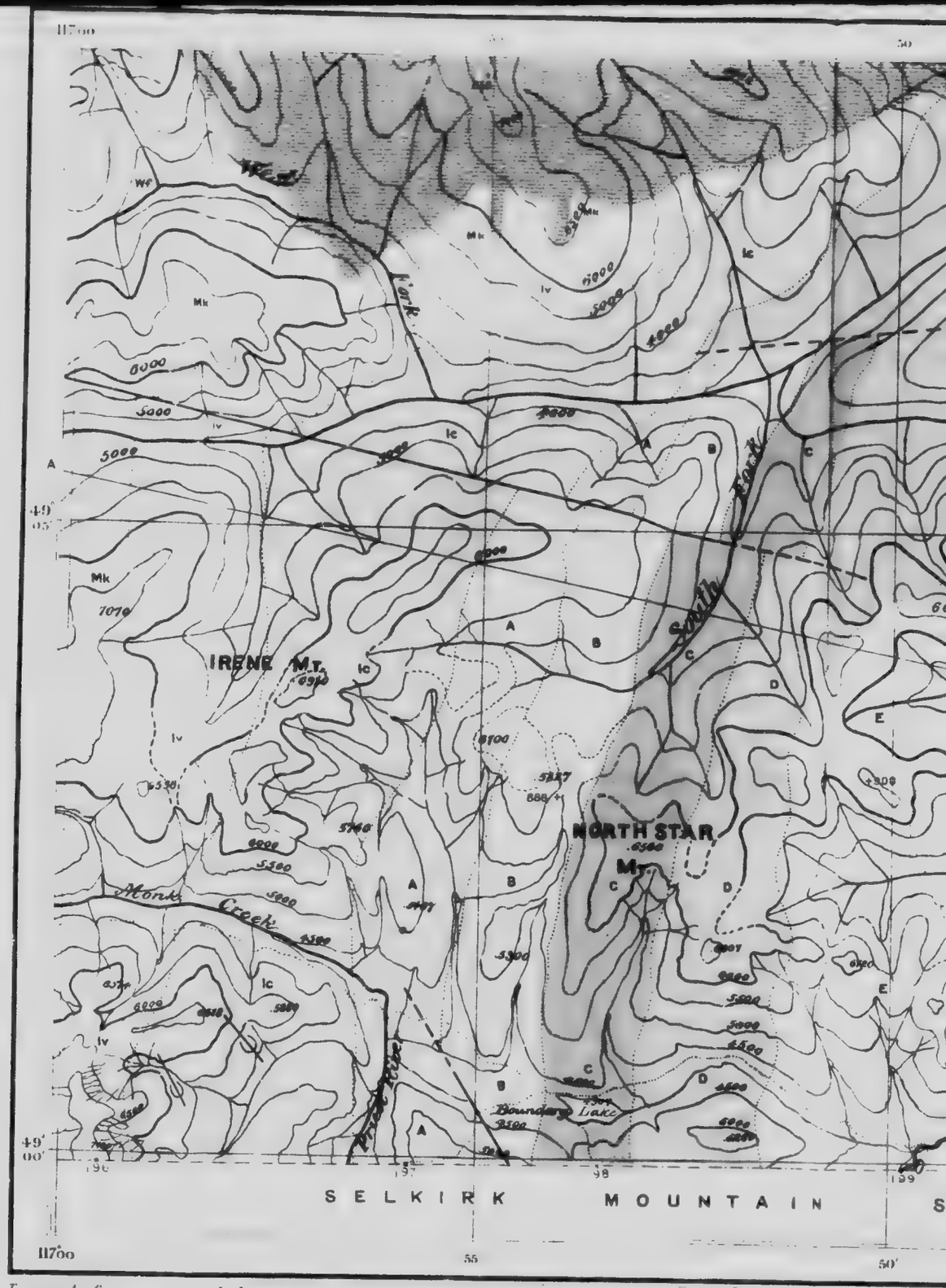
SHEET 6.—PURCEL

PURCELL TRENCH



CAMBRIAN JURASSIC TERTIARY

PRE-BELTIAN PRIEST RIVER TERRANE

BELTIAN

LOWER CAMBRIAN (?)
BELTIAN MID-CAMBRIAN

Kc

Kitchener formation

Wf

Wall formation

Mk

Monk formation

Iv

Irene volcanic formation

Ic

Irene conglomerate

A

B

C

D

E

F

G

Intrusive

Bayonne batholith

Ryker batholith

Abnormal hornblende granite
probably a sill

Abnormal hornblende gabbro
in Kitchener formation

Greenstone
dikes and sheets in the Priest River terrane

Symbols

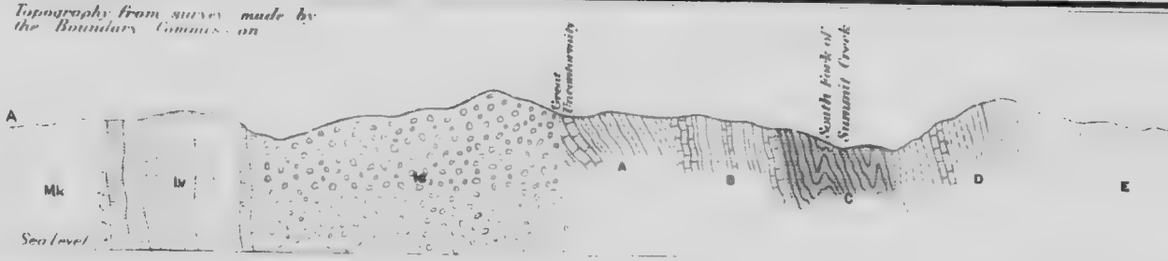
Geological boundary

Fault

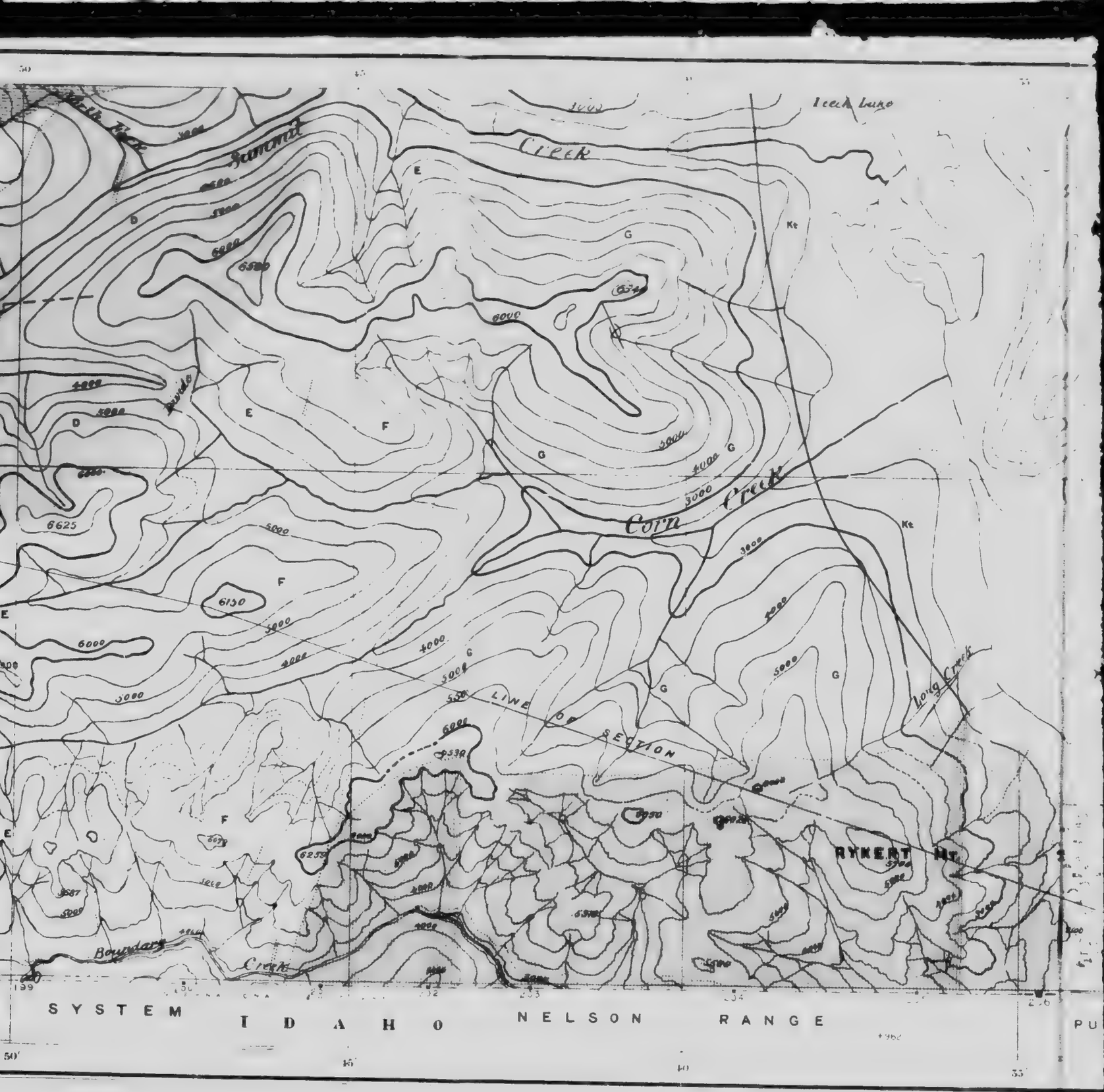
Glacial striae

Note: Structure of Pre-Beltian series shown in section merely diagrammatic. Localities not chronologically numbered

Topography from survey made by the Boundary Commission



GEO



Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: 62500 = 0·9864 Statute Miles to 1 Inch

Miles

Contour interval 500 feet

1265

...e AB

...H PARALLEL. By R. A. Daly.

...te Miles to Inch

MAP 79A

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SHEET 7. PEND D' OR

D' OREILLE RIVER

LEGEND

TERTIARY

Be — Beaver Mountain sediments

Bv — Beaver Mountain volcanics

CARBONIFEROUS (?) to CRETACEOUS

Rs — Rossland volcanic formation
Flows and pyroclastic deposits of augite andesite and basalt

CARBONIFEROUS

Pend D'Oreille limestone
white to bluish, massive marbles

CARBONIFEROUS ORDOVICIAN

PD — Pend D'Oreille schist
carbonaceous phyllite with quartzite and amphibolitic intercalations

MIDDLE CAMBRIAN

L — Lone Star formation
dark grey, carbonaceous phyllite with quartz schist and quartzite

B — Beehive formation
banded quartzite, with thin interbeds of metargillite

LOWER CAMBRIAN & BELTIAN

Rp — Ripple formation
massive white quartzite

Dewdney formation
banded quartzite, with conglomerate interbeds

Wolf formation
massive grey grit and arkose in very thick beds; subordinate sandstone

Monk formation
alternating phyllites and metamorphosed micaceous grits, sandstones, and conglomerates; green colours

BELTIAN

Iv — Irene volcanic formation
thick flows of pyroxene andesites with some pyroclastics

TERTIARY

Intrusive

Salmon river monzonite
stock

Granite
catalithic to Bayonne batholith

Olivine syenite
stocks

Symbols

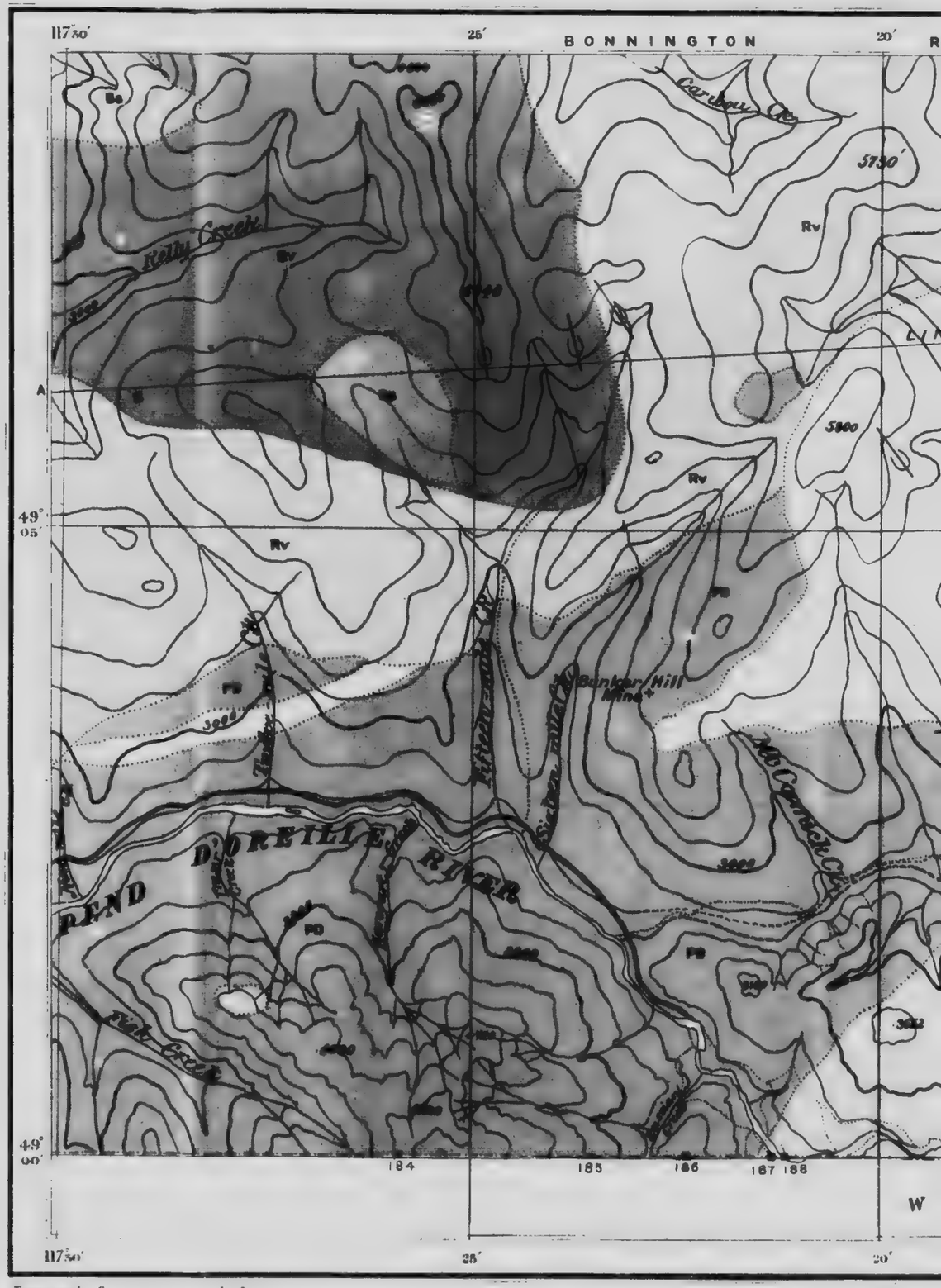
Geological boundary

Fault

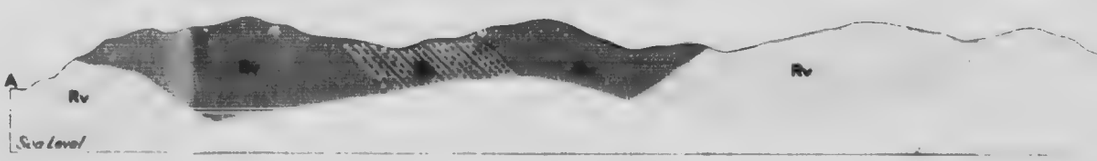
Glacial striae

Note *Somewhat numerous though narrow dikes of monzonite cutting the schists in the Pend D'Oreille valley are not shown*

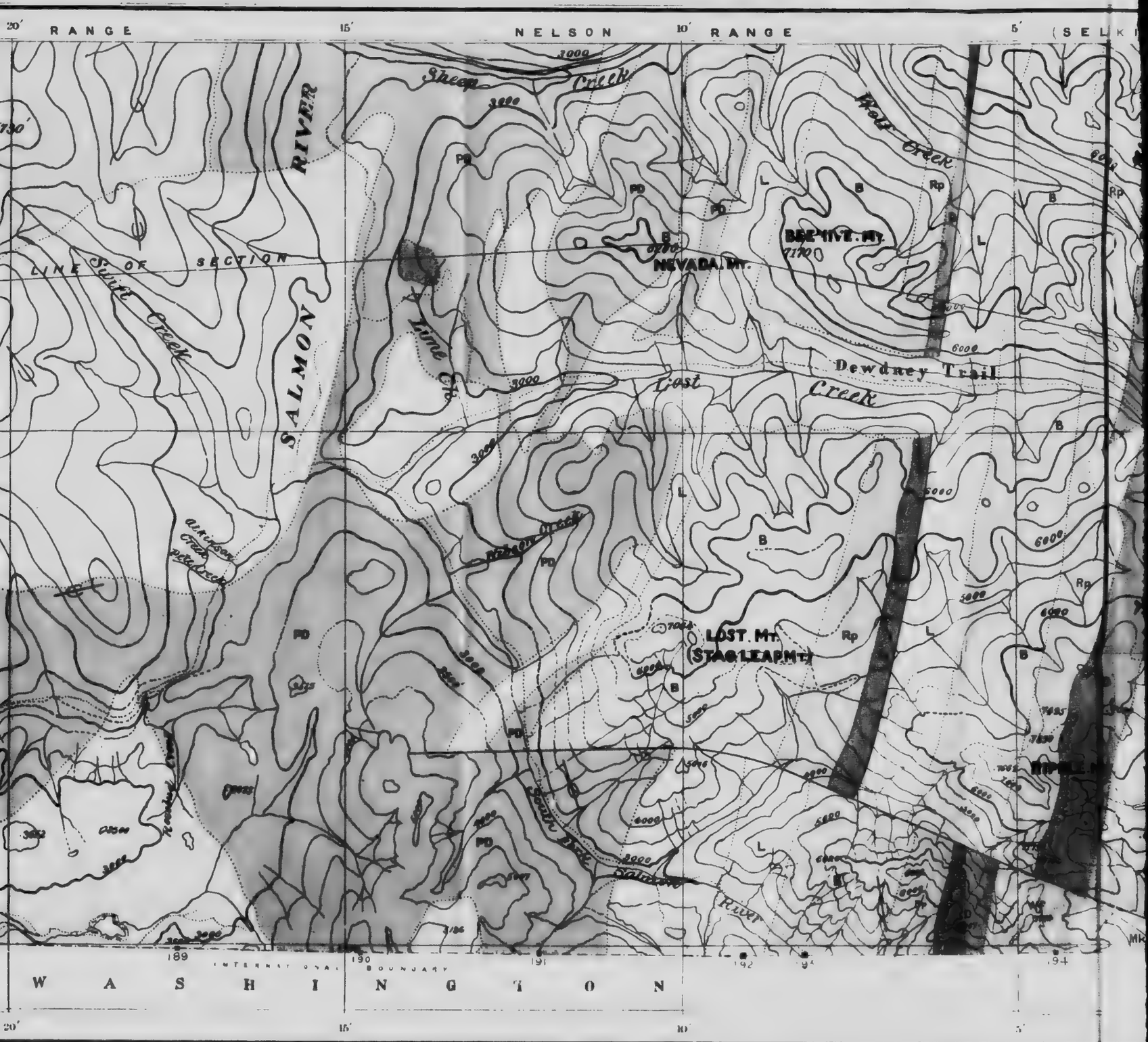
Note *Localities of chemically analysed rocks shown thus* + 666



Topography from surveys made by the Boundary Commission



GEO



Section along line A B C

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: 1/500 = 0.9864 Statute Miles to 1 Inch

Miles

Contour interval 500 feet

NELSON 10' RANGE 5' SELKIRKS 11700

SALMON RIVER

Sheep Creek

Red Creek

BEEHIVE Mt. 7170

NEVADA Mt.

Lime Cr.

Dewdney Trail

East Creek

Nelson Creek

LOST Mt. (STAG LEAP Mt.)

South Fork Salmon River

Mark Cr.

Mk

Mk

IV

49° 05'

49° 00'

HINGTON

IDAHO

15 10 5 11700

Section along line ABC

ORTY-NINTH PARALLEL, By R.A. Daly.

Scale 0.9864 Statute Miles to 1 Inch

Miles

MAP 80A

SHEET 8. ROSSLAND M

LEGEND

TERTIARY

Conglomerate
fossiliferous on Sophie mountain

Bs

Beaver mountain sediments
grey and brown shales and sandstones

Bv

Beaver mountain volcanics
flows and pyroclastic deposits of quartz andesite and basalt

CARBONIFEROUS TO CRETACEOUS

Rv

Rossland volcanic formation
lows and pyroclastic deposits of lustre andesites and basalt

LOWER CRETACEOUS

Carbonaceous argillite, sandstone, etc
fossiliferous

CARBONIFEROUS

Pd

Pend D'Oreille limestone
white marble fossiliferous

CARBONIFEROUS TO ORDOVICIAN

Pd

Pend D'Oreille schist
carbonaceous phyllite with quartzite and greenstone intercalations

Intrusive

TERTIARY

Coryell batholith
hornblende-idiotite syenite pulaskite with phases of syenite porphyry

Sheppard granite
biotite granite, stocks and dikes

Shatterzone of Trail batholith

MESOZOIC

Trail batholith
granodiorite

Rossland monzonite
stock

Dunite and Serpentine
dikes and chonoliths

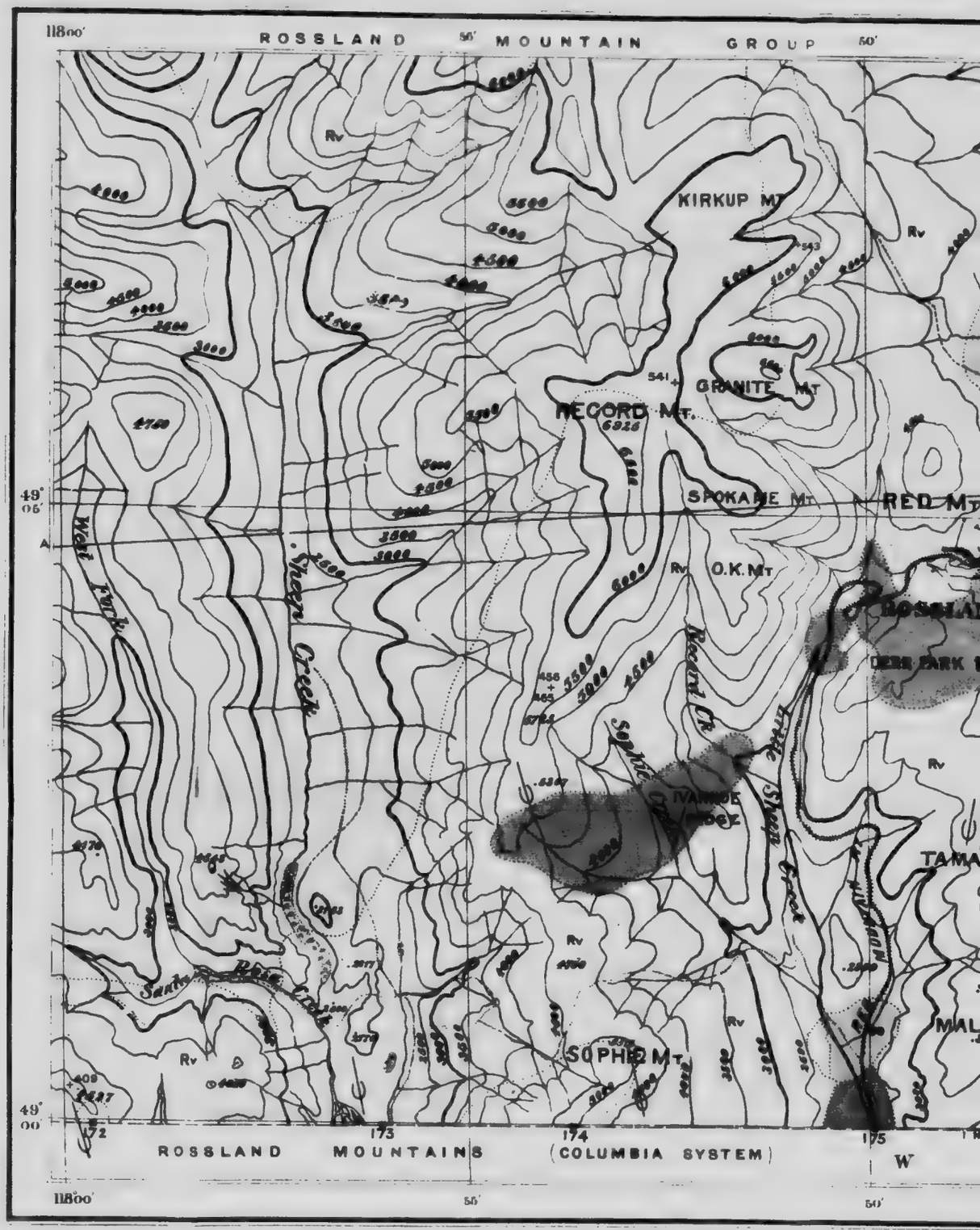
Symbols

Geological boundary

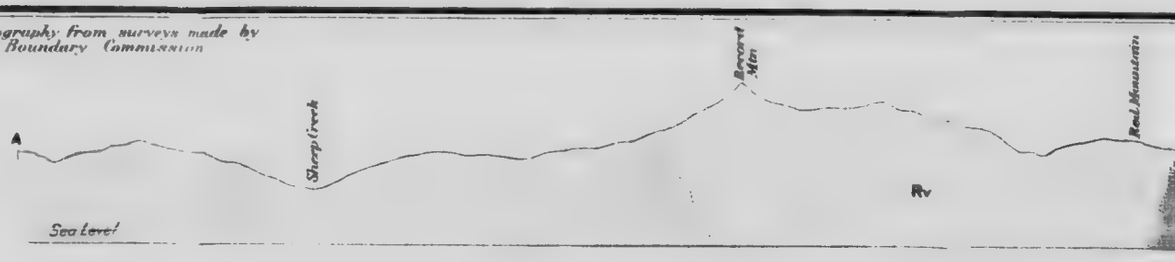
Glacial striae

Note *Many minettes and other microlamprophyres cut the Pend D'Oreille schists in the Pend D'Oreille river gorge, as well as the older rocks in the Rossland mining camp. Numerous porphyrite dikes syngenetic with the Rossland volcanics are not shown, and aphyrical dikes from batholiths and stocks are likewise not plotted*

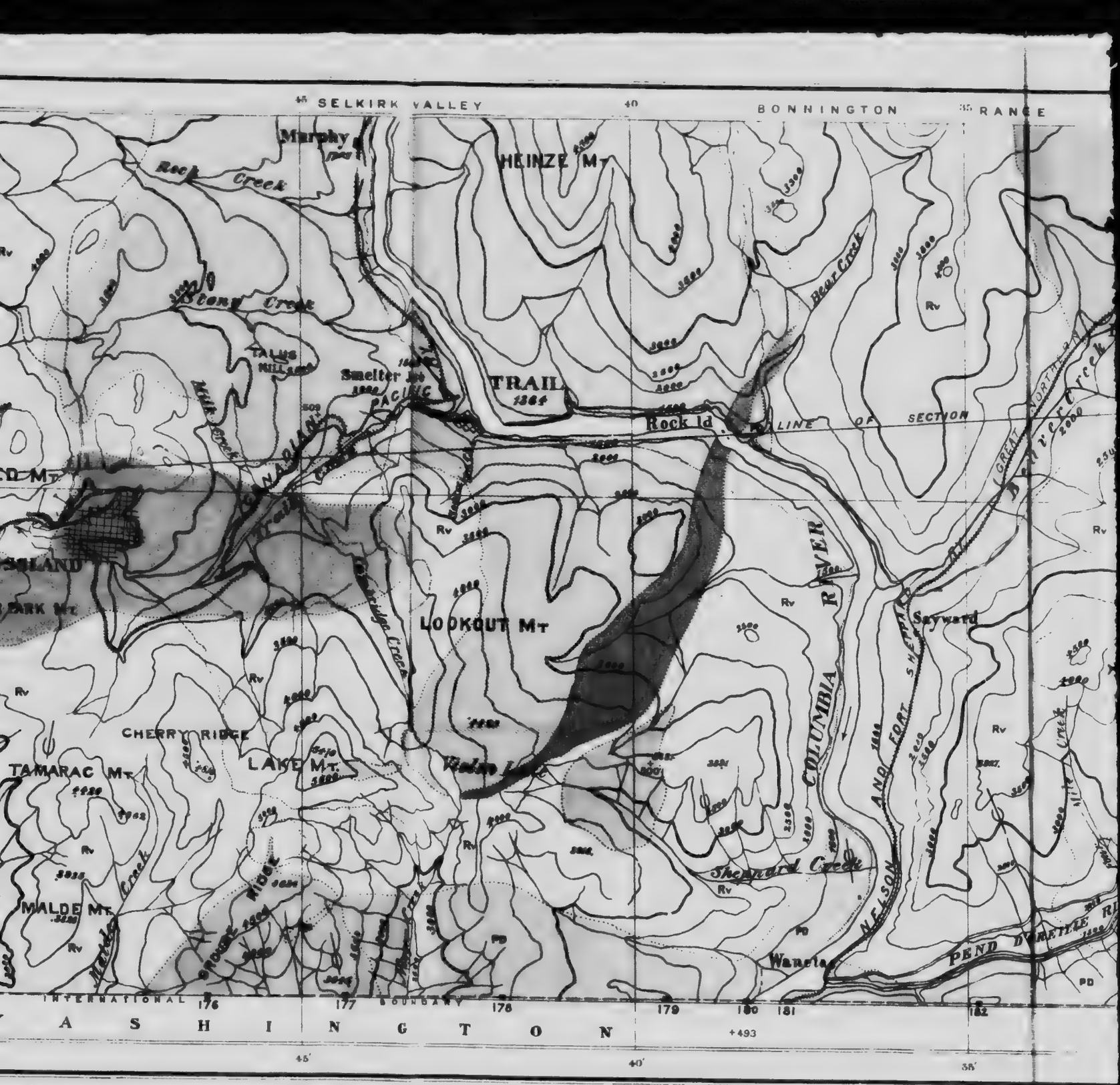
Localities of chemically analyzed rocks shown thus +409



Topography from surveys made by the Boundary Commission



GEOLOG

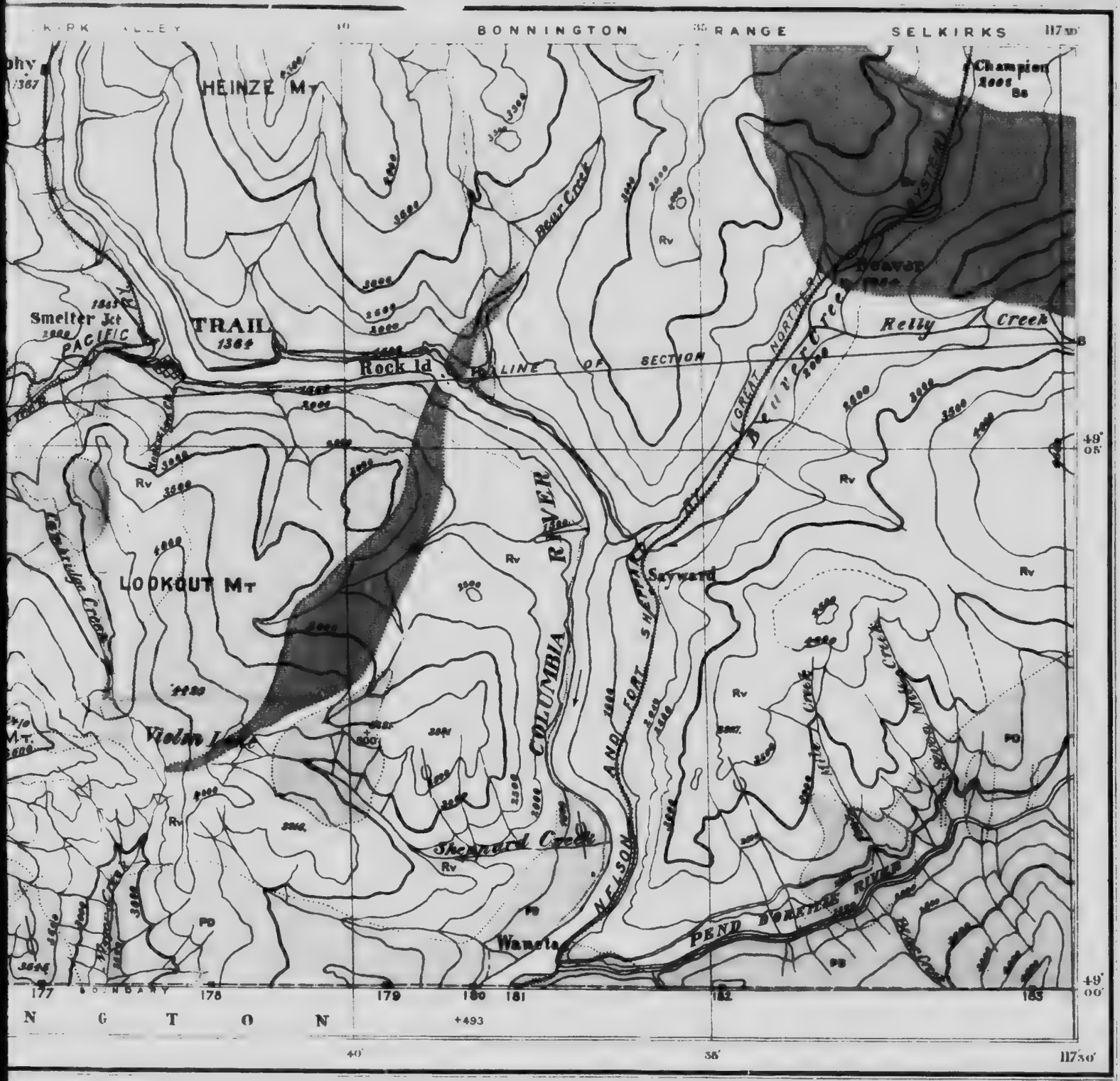


Section along line A B

OLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: 62500 = 0·9864 Statute Miles to Inch

Contour interval 500 feet



line A B

TH PARALLEL, By R.A. Daly.

ure Miles to Inch

500 feet

MAP 81 A

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SHEET 9. CHRIST

ERRATA

Boundary Monument 156 should re
" " 157 " "
" " 158 " "
" " 159 " "
" " 160 " "
" " 161 " "
" " 162 " "
" " 163 " "
" " 164 " "
" " 165 " "
" " 165 is a few ya
track nea

RATA

hould read 155
" " 156
" " 157
" " 158
" " 159
" " 160
" " 161
" " 162
" " 163
" " 164
a few yards east of the railway
rack near Laurier.

LEGEND

CARBONIFEROUS TO CRETACEOUS — TERTIARY

Conglomerate

Px

Phoenix volcanic formation.
flows and pyroclastic deposits of augite andesite etc

Rv

Rossland volcanic formation
flows and pyroclastics derived from basic volcanics and sediments

CARBONIFEROUS PALAEOZOIC? — **Su**

Sutherland schists
mainly clastic sediments, quartzite and micaceous schists etc

Limestone
white to bluish massive

GF

Grand Forks schists
amphibolite, hornblende schists etc

Intrusive

EOCENE? — MIOCENE?

Coryell batholith
hornblende biotite syenite, quartz syenite

Syenite porphyry
peripheral, younger phase of Coryell batholith

EOCENE? — Olivine syenite

Barkerville gabbro

CRETACEOUS? — Butter Creek peridotite

Fife gabbro

Baker gabbro

Dunite

JURASSIC? — Smelter stock
quartz syenite

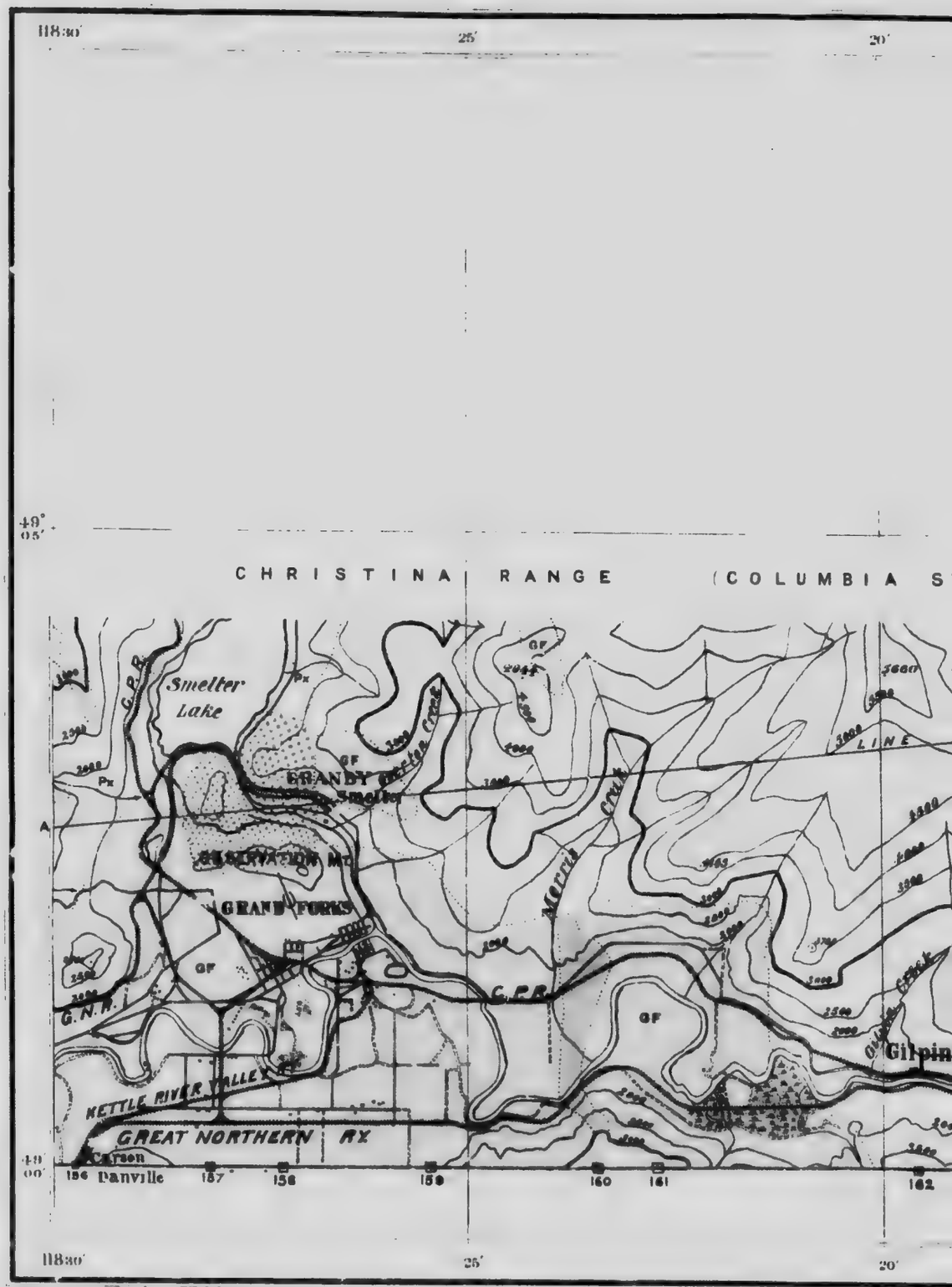
Cascade batholith
mainly biotite granite, satellitic stock south of Castle mountain

Symbols

Geological boundary

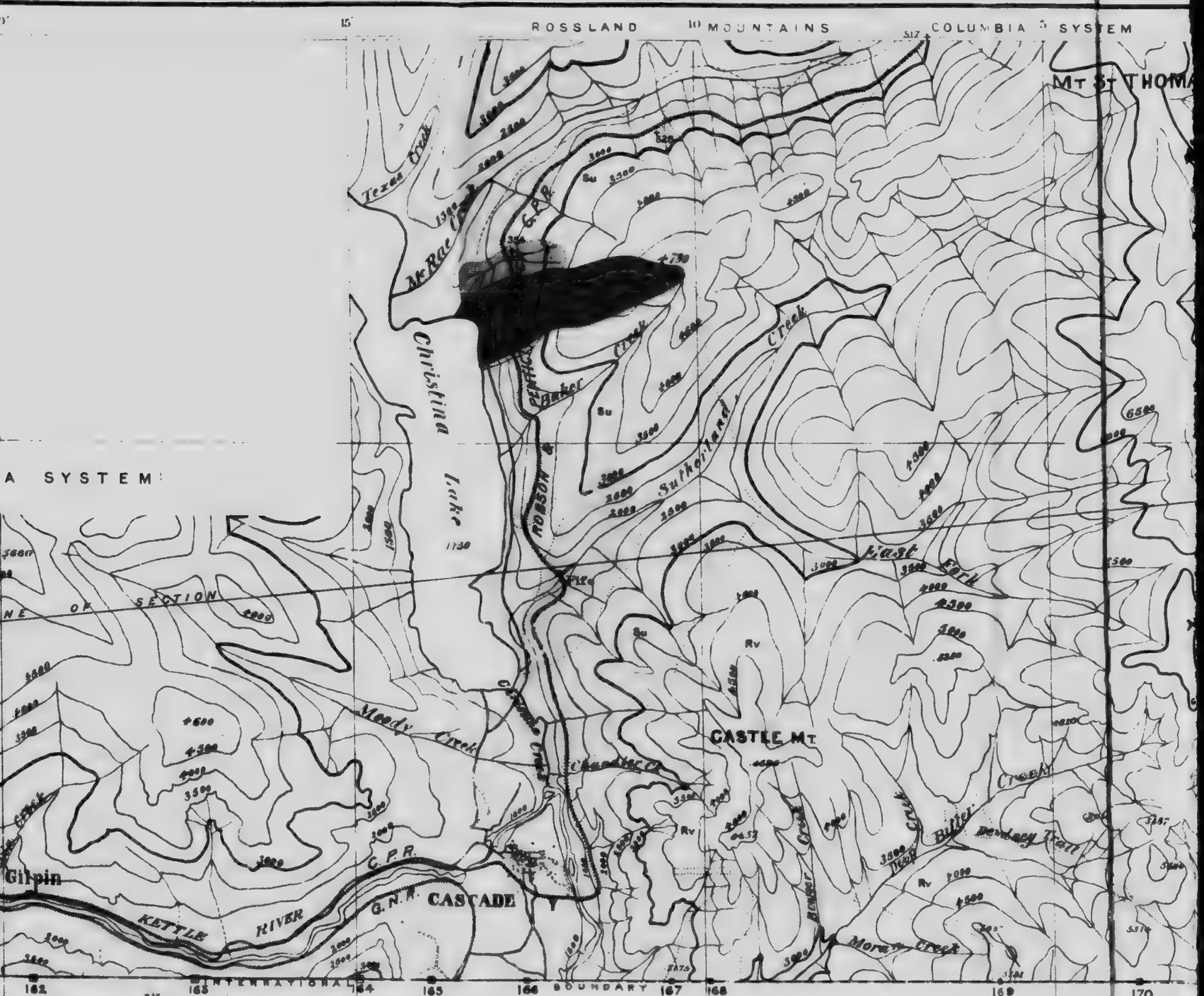
Glacial striae

Note — *Folded structure of Sutherland and Grand Forks schists in section mainly diagrammatic.*
Many exposed lakes show large successive masses not shown.
Localities of chemically analysed rocks shown thus + 517



Topography from surveys made by the Boundary Commission

GEOL



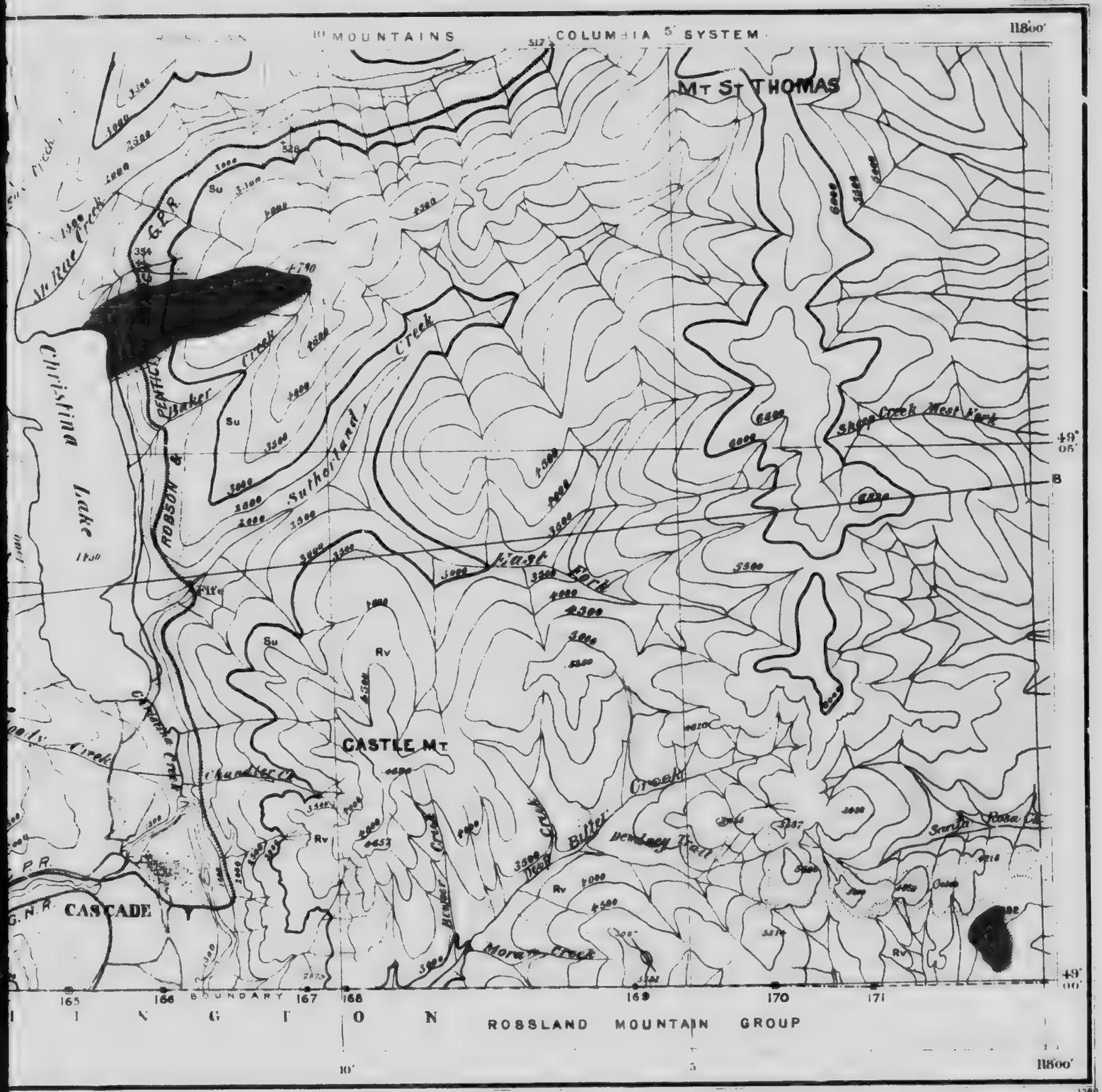
Section along line AB

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: 1/500 — 0.0864 Statute Miles to 1 Inch

Miles

Contour interval, 500 feet



g line AB

TH PARALLEL. By R.A. Daly.

tute Miles to 1 Inch

MAP 8 A

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SHEET 10. M

E

Boundary	Monume
"	"
"	"
"	"
"	"
"	"
"	"
"	"
"	"
"	"
"	"
"	"

ERRATA

Monument 144 should be deleted
" 145 should read 144
" 146 " " 145
" 147 " " 146
" 148 " " 147
" 149 " " 148
" 150 " " 149
" 151 " " 150
" 152 " " 151
" 153 " " 152
" 154 " " 153
" 155 " " 154

LEGEND

PLEISTOCENE & RECENT

(?) MIOCENE

Alluvium and glacial drift

Mc

Midway volcanic group
trachyte and analcitic rhomb-porphyry flows and pyroclastic deposits

Ma

Midway volcanic group
andesites and basalt; flows and pyroclastic deposits

OLIGOCENE

KR

Kettle river formation
sandstone, conglomerate, shale, arkose

CARBONIFEROUS TO TRIASSIC

Px

Phoenix volcanic formation
flows and pyroclastic deposits of augite andesite, etc.

(?) CARBONIFEROUS

At

Attwood series
argillite, quartzite, limestone

An

Anarchist series
quartzite, phyllitic shales, greenstones with some limestone beds.

Limestone
crystalline, bluish-grey to white

(?) (?)

Chlorite and hornblende schist

(?)

GF

Grand Forks schist
amphibolite, hornblende schists, etc.

Intrusive

(?) MIOCENE

Pulaskite porphyry
dikes and sills

Rhomb - porphyry

OLIGOCENE

Porphyrite
chonoliths, dikes and sills

(?) JURASSIC

Granodiorite
stocks, dikes, etc

(?) CRETACEOUS

Serpentine
dikes, etc.

Symbols

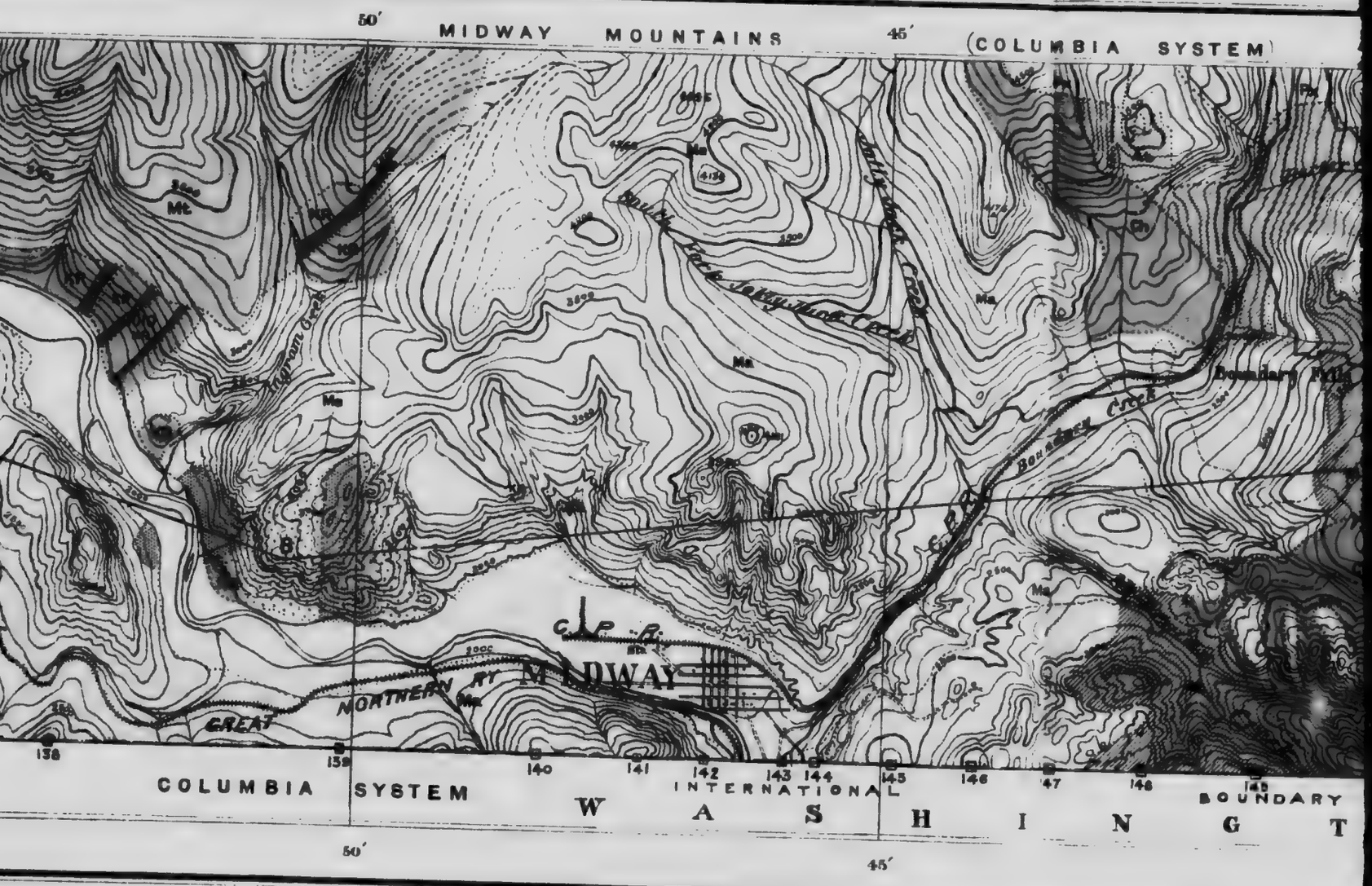
Geological boundary

Glacial striae

Topography from surveys made by the Boundary Commission.

Note *Structures shown in schists and limestone merely diagrammatic. On account of the small scale, many dikes and intrusive sheets of porphyrites and porphyries, as well as granodiorite apophyses are not plotted. Similarly many dikes which are cogenetic with the volcanics are not shown*

Localities of chemically analyzed rocks, shown thus, + 1010



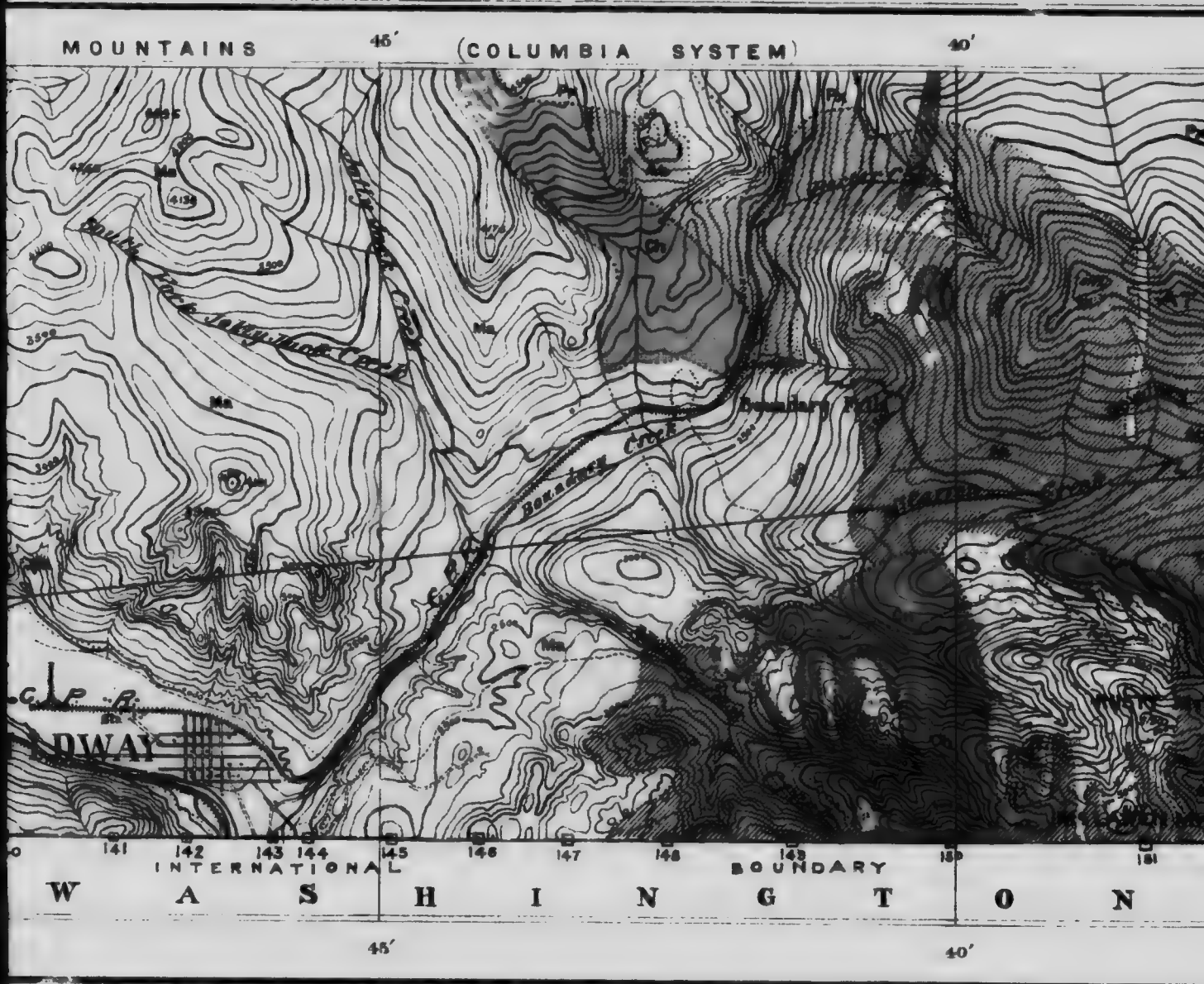
Section along line A B C

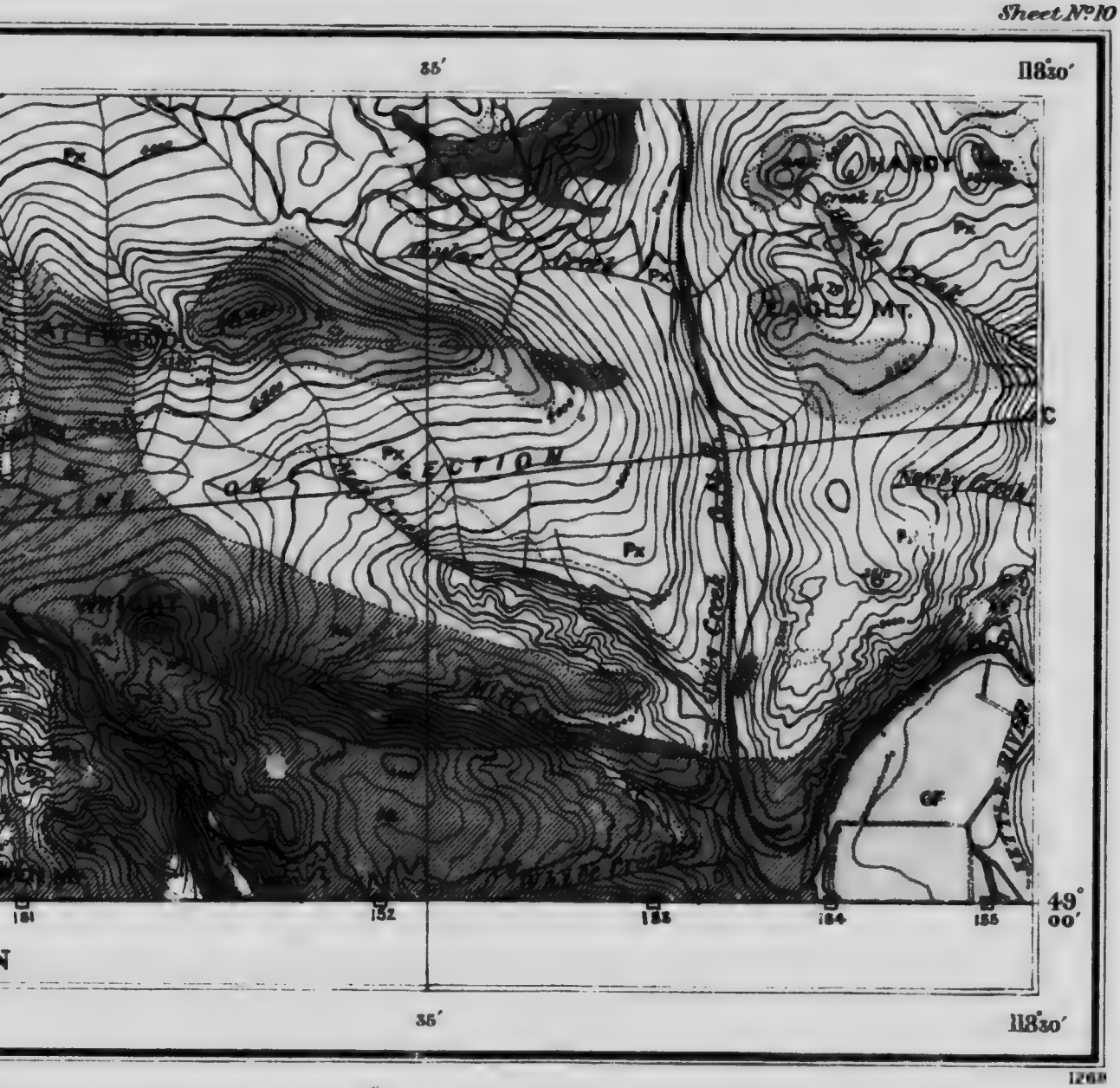
GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly

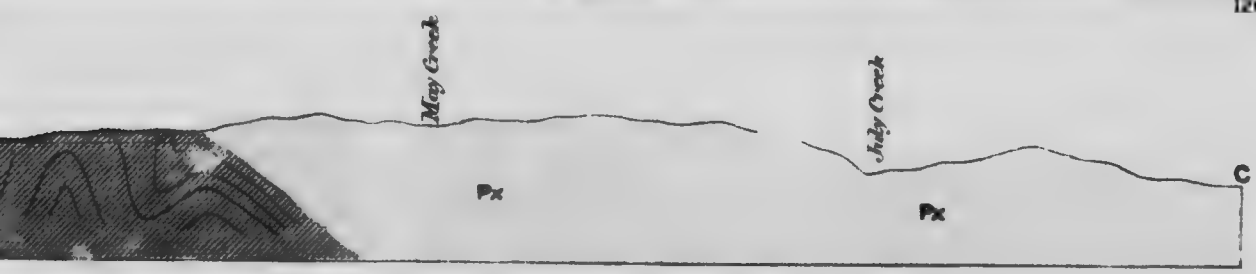
Scale: ~~62500~~ – 09864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet


MOUNTAINS
45′
(COLUMBIA SYSTEM)
40′
Boundary Creek
Boundary Peak
Mount Baldy
Mount Old Baldy
Mount Lolo
Mount Lolo Creek
Lolo Creek
Mount Lolo Peak
Mount Lolo Trail
Mount Lolo Pass
Mount Lolo Ridge
Mount Lolo Mountain
Mount Lolo Valley
Mount Lolo Basin
Mount Lolo Lake
Mount Lolo Falls
Mount Lolo Bridge
Mount Lolo Road
Mount Lolo Trail
Mount Lolo Creek
Mount Lolo Peak





MAP 83A

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SHEET 11. OSC

1. OSOYOOS

LEGEND

PLEISTOCENE & RECENT

Glacial drift and alluvium

(?) MIOCENE

Shack... Flows (part of Midw... anic group)

Extrusive rhomb-porphyry
Flows (part of Midway volcanic group)

OLIGOCENE

Kettle river formation
sandstone, conglomerate, shale, arkose

(?) CARBONIFEROUS

Limestone of Anarchist series
white to bluish-grey, crystalline

(?) UPPER PALAEOZOIC

An

Anarchist series
quartzite, phyllitic slates, greenstones, with limestone beds.

Intrusive

(?) MIOCENE

Intrusive rhomb-porphyry
chonolithe and dikes

(?) JURASSIC

Granodiorite

Osoyoos batholith
gneissic derivative of granodiorite

Diorite and gabbro

(?) LATE PALAEOZOIC

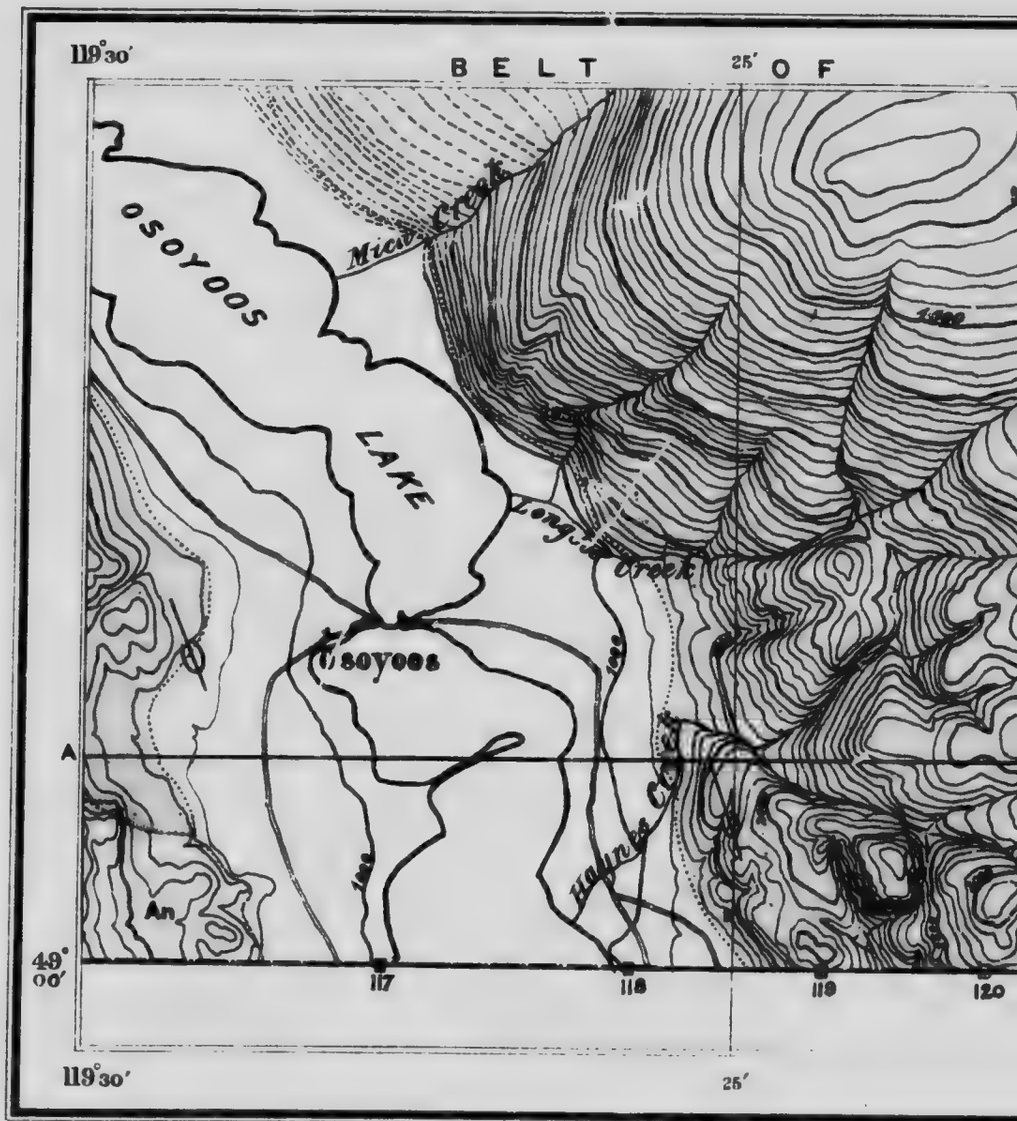
Dunite

Symbols

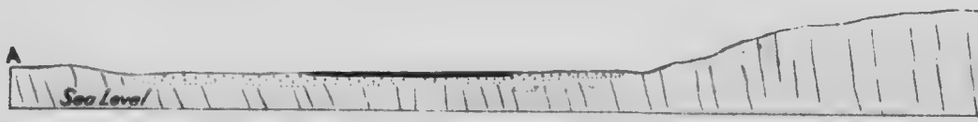
Geological boundary

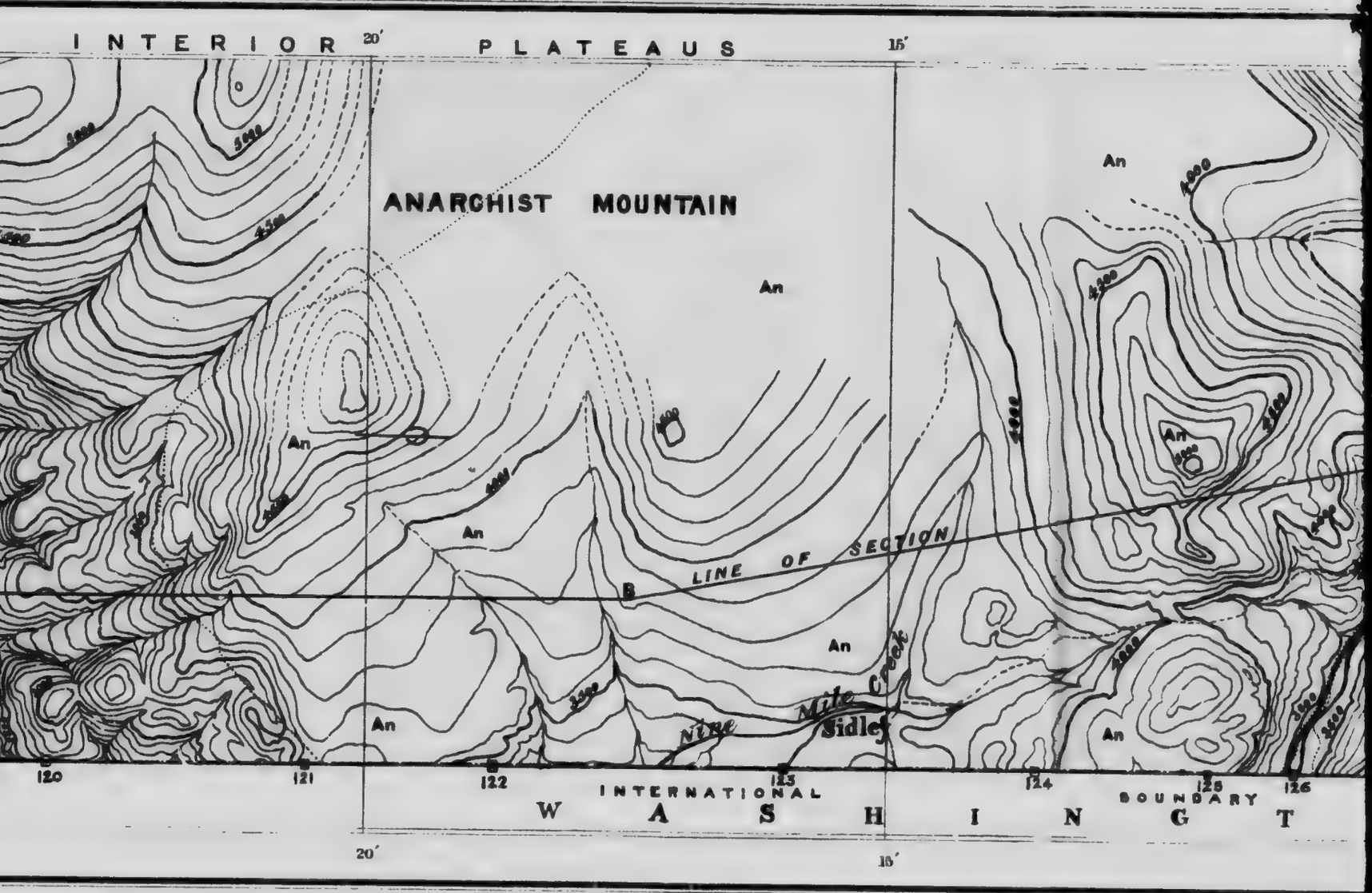
Glacial striae

Note Structures of Anarchist series shown in the section, merely diagrammatic
Localities of chemically analyzed rocks, shown thus, +295



Topography from surveys made by the Boundary Commission.





Section along line A B C

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly

Scale: ~~62500~~ 1 — 09864 Statute Miles to 1 Inch

Miles

1 ½ 0 1 2 3 4

Contour interval, 100 feet

15′ 10′ 5′ MIDWAY MOUNTAINS 119°00′

OF SECTION

BOUNDARY

S H I N G T O N

49° 00′

15′ 10′ 5′ 119°00′

1270

Section along line A B C

RTY-NINTH PARALLEL, By R.A. Daly.

0—09864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet

MAP 54A

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SHEET 12. KRUGER MOU

R MOUNTAIN

LEGEND

UPPER PLEISTOCENE & RECENT

Glacial drift and alluvium

An

Anarchist series
phyllite, slate, quartzite, greenstone, amphibolite, with limestone pods

Intrusive

TERTIARY

Cathedral batholith
alkaline biotite granite

Similkameen batholith
granodiorite

Kruger alkaline body
malignite and elaolite syenite

JURASSIC(?)

Osoyoos gneissic batholith

LATE PALAEOZOIC(?)

Basic intrusives of Richter mountain

Peridotite

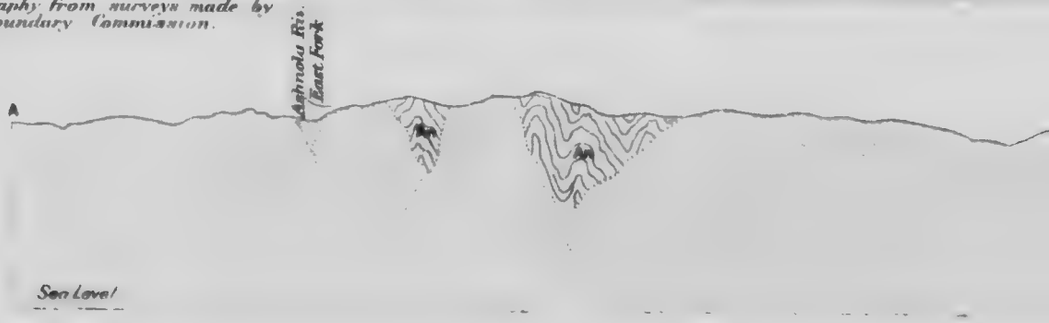
Symbols

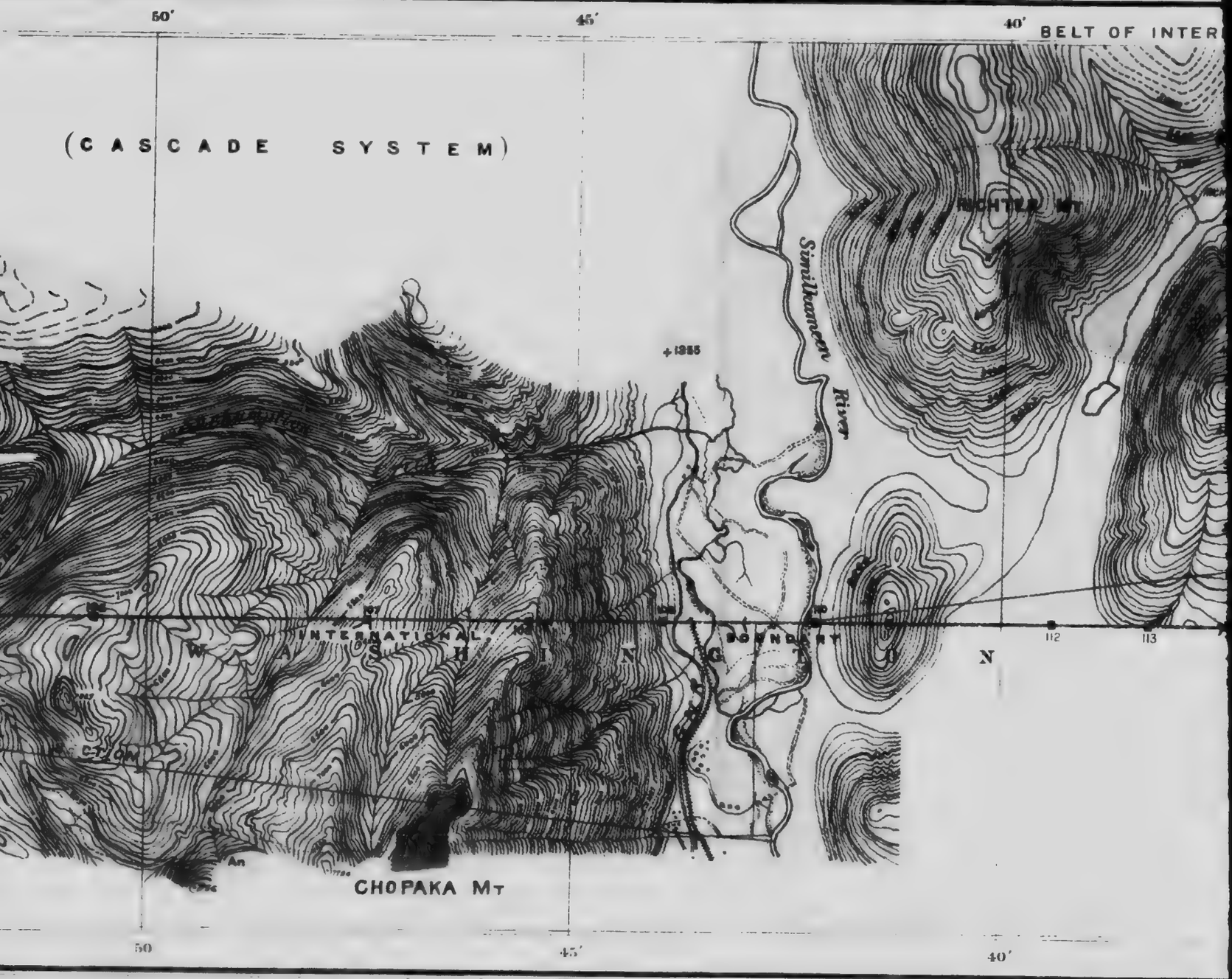
Geological boundary

Glacial striae

Note *Structure of Anarchist series, shown in section, merely diagrammatic.*
Localities of chemically analyzed rocks, shown thus +1100

Topography from surveys made by the Boundary Commission.





Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: 63360 = 00864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet

45′ 40′ BELT OF INTERIOR PLATEAUS 35′ 119°30′

(STEM)

OSOYOOS LAKE

Similkameen River

KRUGER MOUNTAIN

+1955

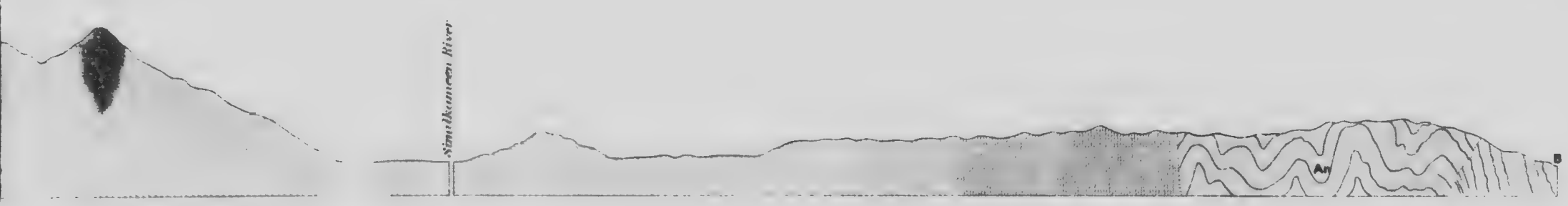
CHOPAKA MT

112 113 114 115 116

49°

45′ 40′ 35′ 119°30′

1271



Section along line A B

THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: $\frac{1}{62500}$ = 00864 Statute Miles to 1 inch

Miles 0 1 2 3 4

Contour interval, 100 feet

MAP 85 A

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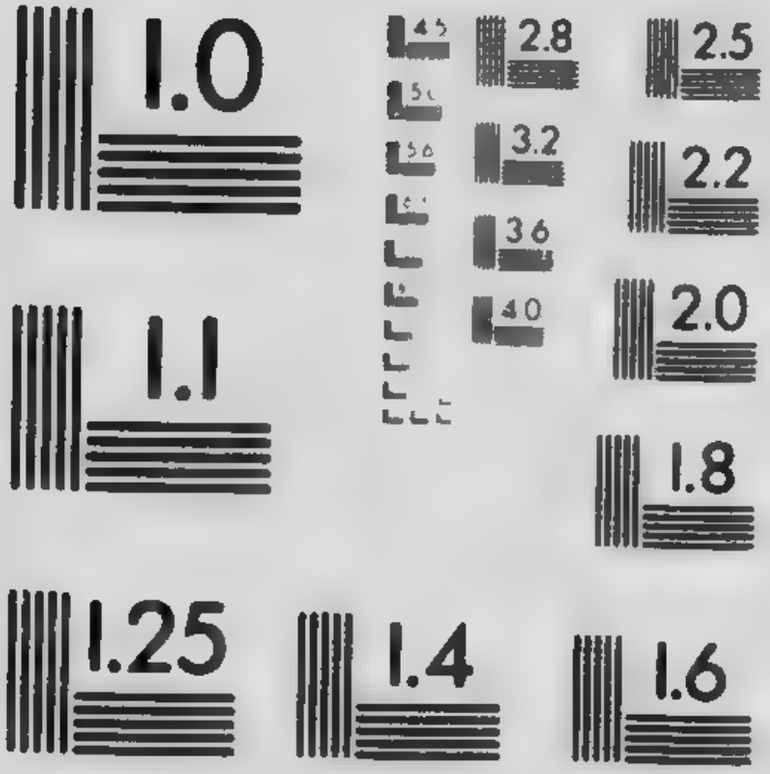
SHEET 13. OKANAGAN RANGE

MICROCOPY RESOLUTION TEST CHART

ANSI and ISO TEST CHART No 2



APPLIED IMAGE Inc

[illegible] East Main Street
Rochester New York [illegible]
716 482 [illegible]
716 288 5989 Fax

LEGEND

PLEISTOCENE

Vesicular dikes of basalt *(Bauerman Ridge)* and andesite *(cutting Basic Complex)*

TERTIARY

Park granite stocks

Cathedral batholith
younger more salic phase

LOWER CRETACEOUS

Cathedral batholith
older phase, alkaline biotite granite

Agglomerate

JURASSIC (?)

Remmel batholith
Eastern phase: highly salic derivative of sheared granodiorite

Remmel batholith
Western phase; sheared granodiorite

LATE PALAEOZOIC (?)

Ashnola gabbro

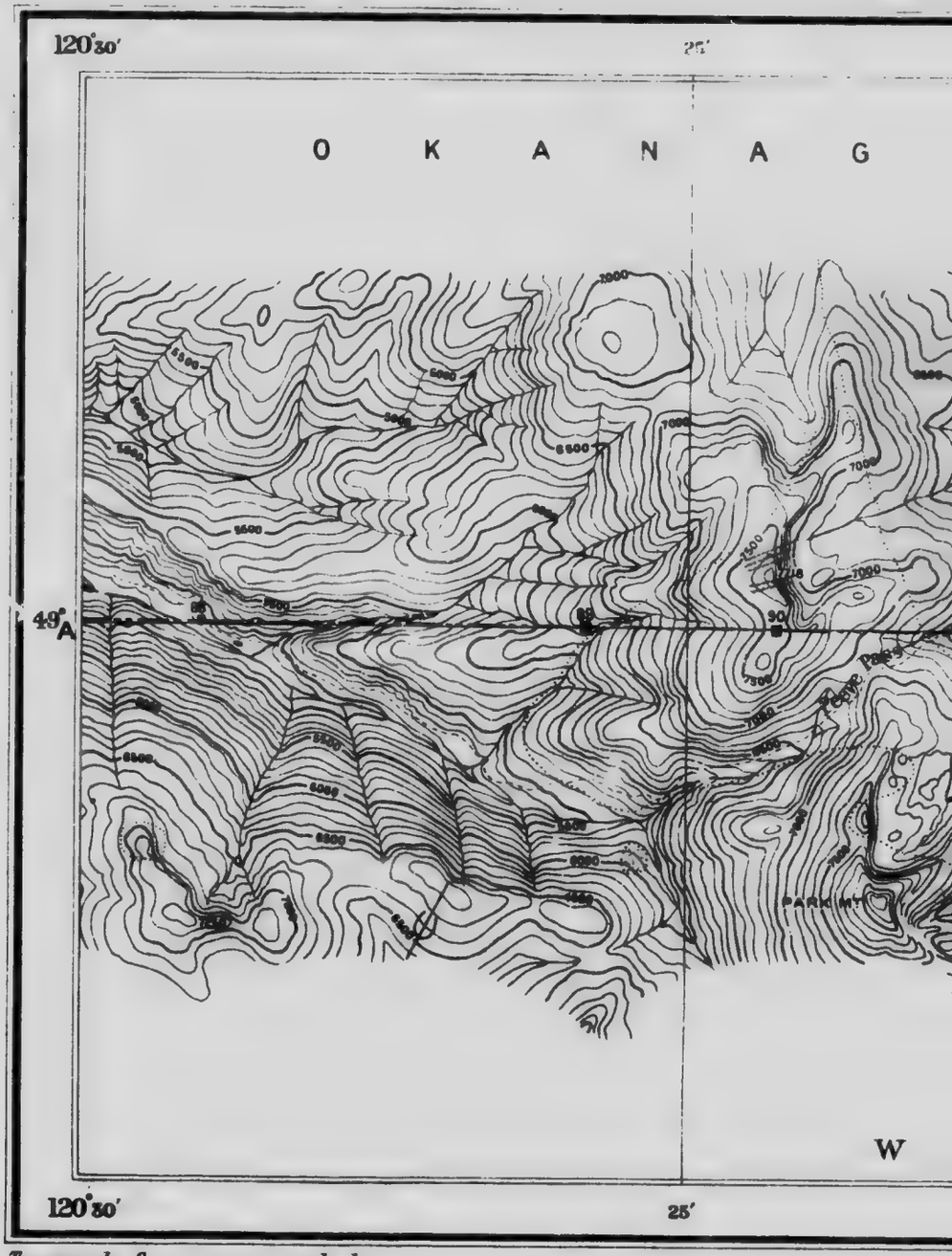
Basic complex

Symbols

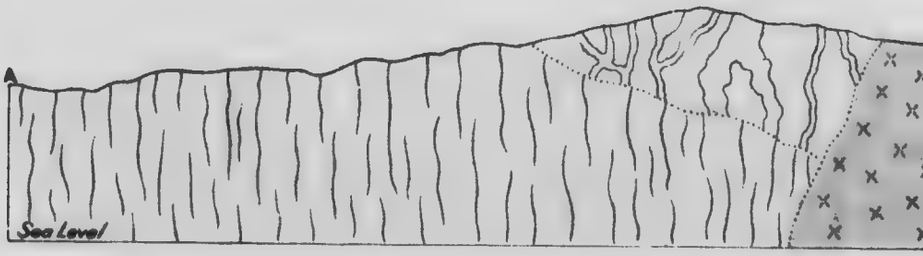
Geological boundary

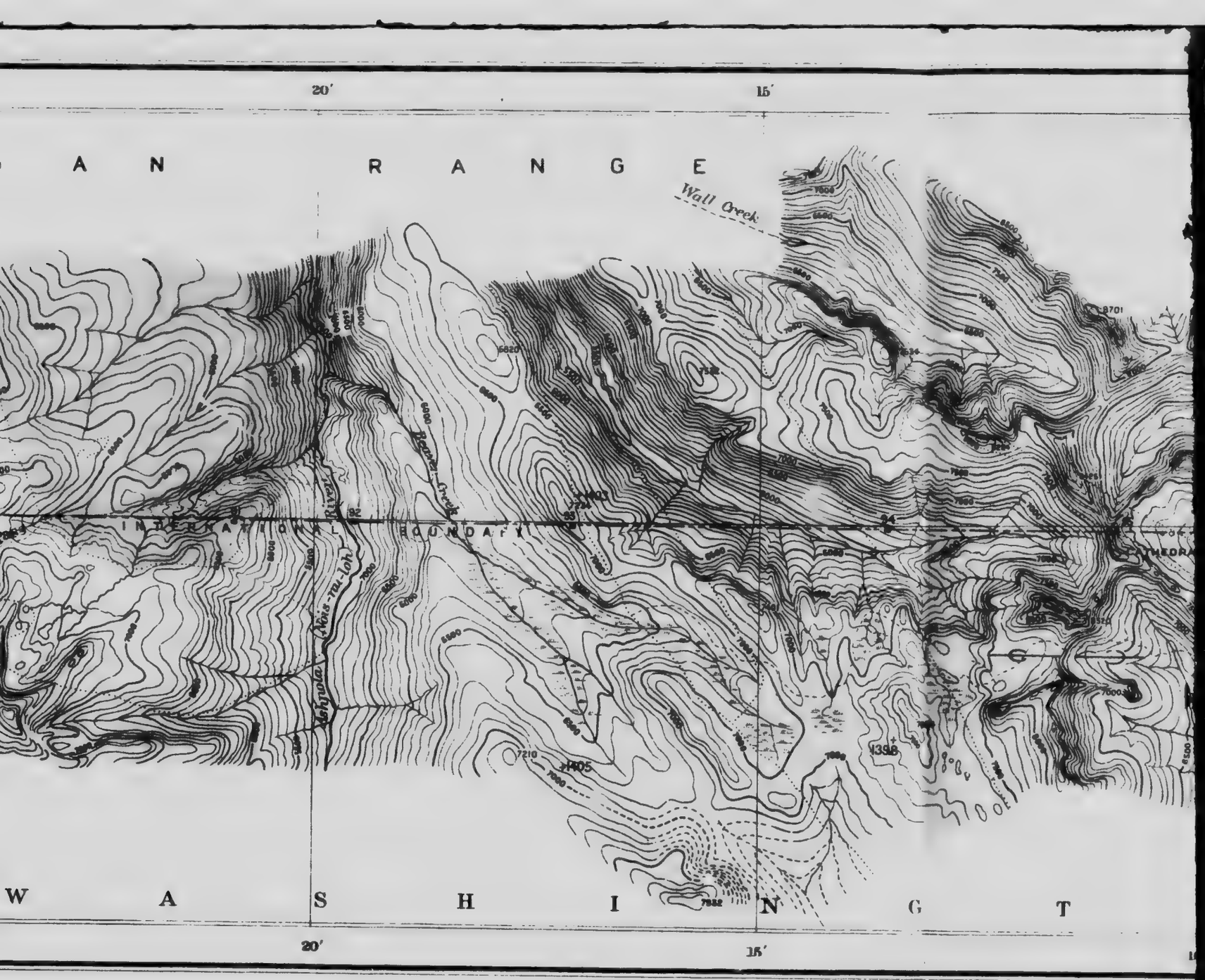
Glacial striae

Note. *Localities of chemically analysed rocks, shown thus,* + 1388



Topography from surveys made by the Boundary Commission.





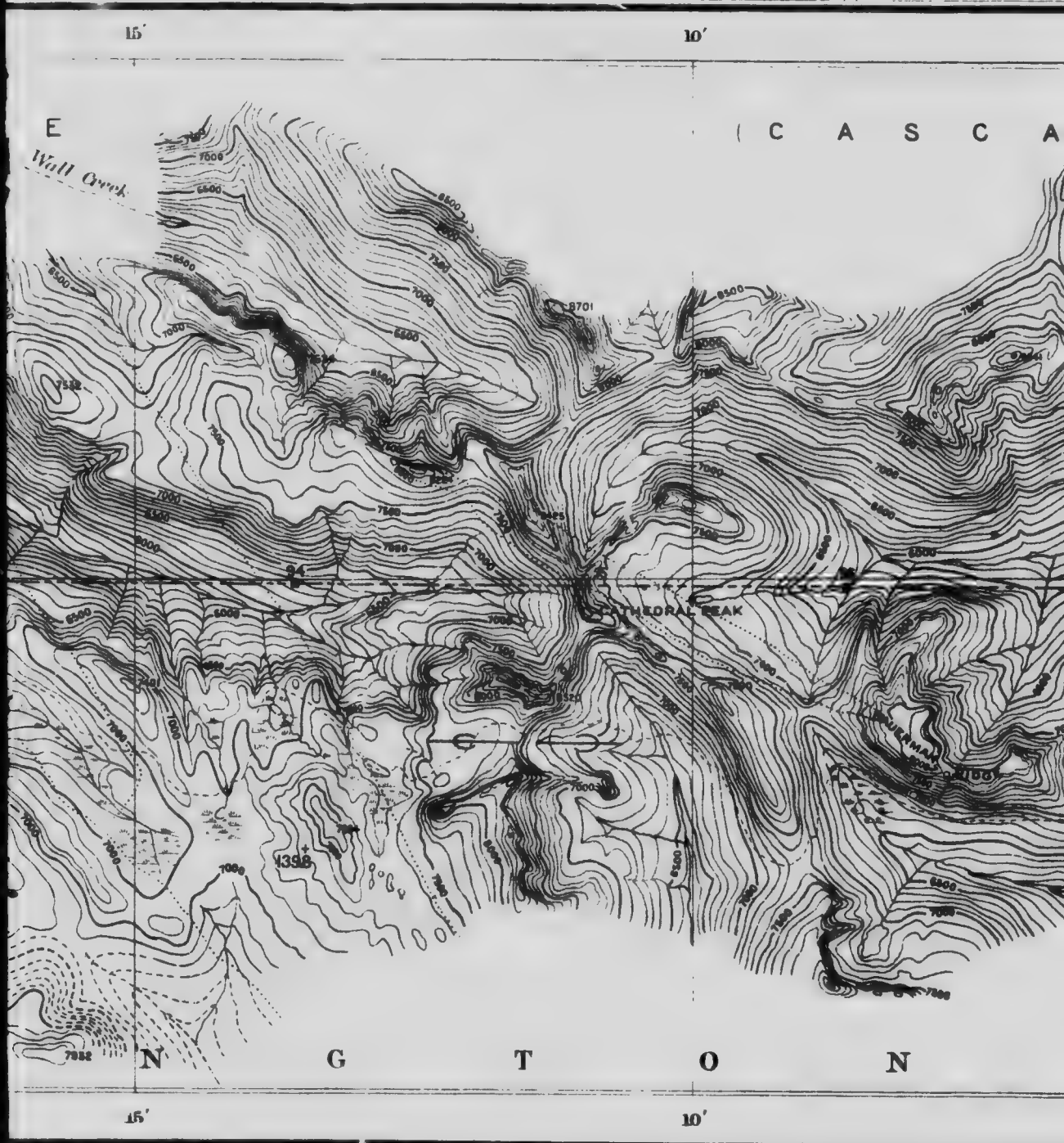
Section along line A B

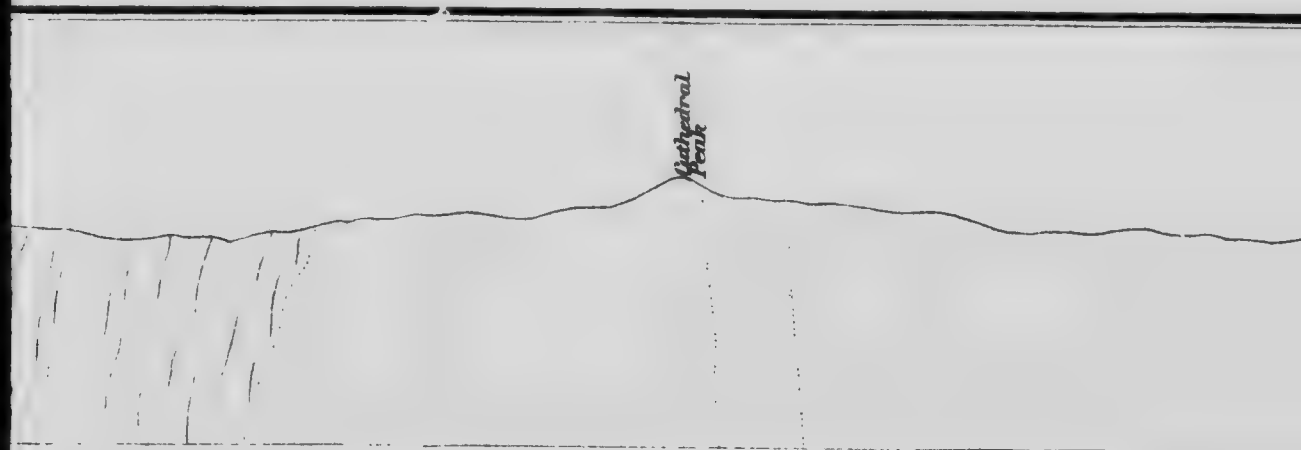
GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Daly.

Scale: ~~1/250~~ – 09864 Statute Miles to 1 Inch

Miles

Contour interval, 100 feet





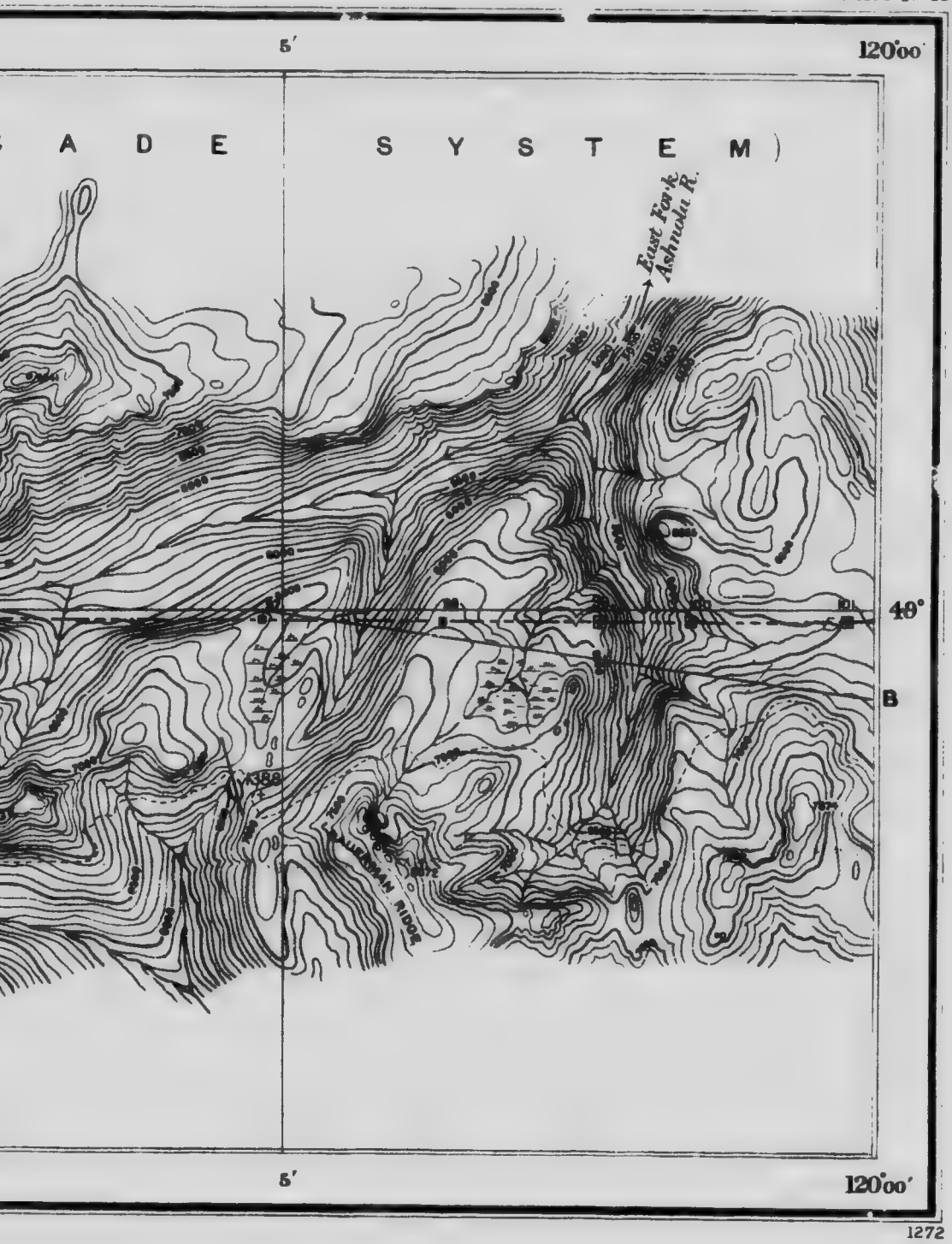
Section along line A B

RTY-NINTH PARALLEL, By R. A. Daly.

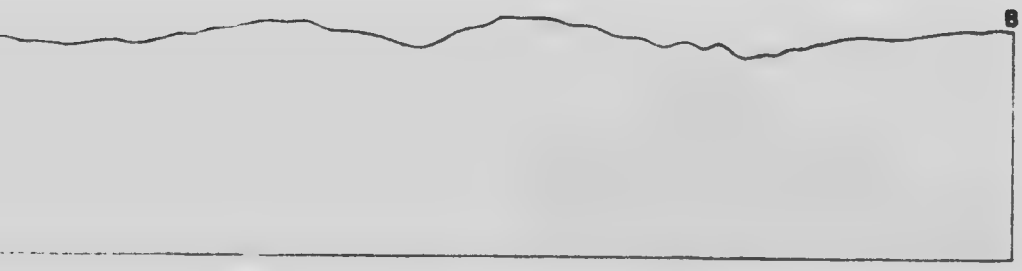
– 09864 Statute Miles to 1 inch

Miles

ntour interval. 100 feet



1272



MAP 86A

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SHEET 14—HOZOMEEN RANGE

LEGEND

CRETACEOUS
SHASTA CHICO
Pasayten series

L

Member L
black argillite

K

Member K
green and grey sandstone with interbeds of shale and conglomerate

J

Member J
coarse conglomerate

B1

Members B to I
arkose and sandstone chiefly, with conglomerate and shale

LOWER CRETACEOUS
CARBONIFEROUS

Pv

Pasayten volcanic formation
andesitic breccia

Hz

Hozomeen series
greenstone cherty quartzite & limestone beds

Intrusive

MIOCENE (?)

Syenite porphyry
chonolith

Castle Mountain stock
granodiorite

JURASSIC(?)

Lightning Creek stocks
diorite

Remmel batholith
western phase. sheared granodiorite

Symbols

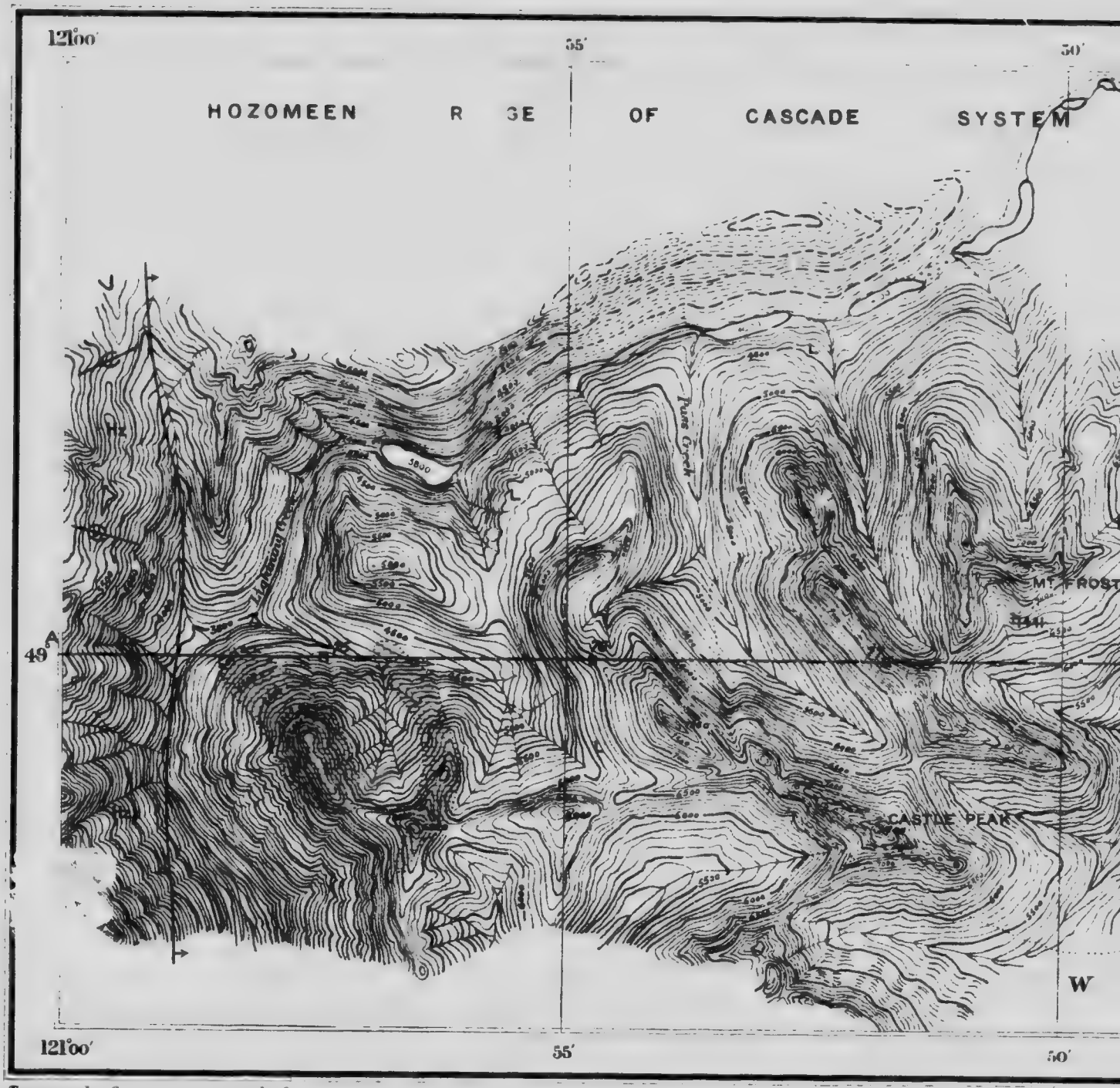
Geological boundary

Fault

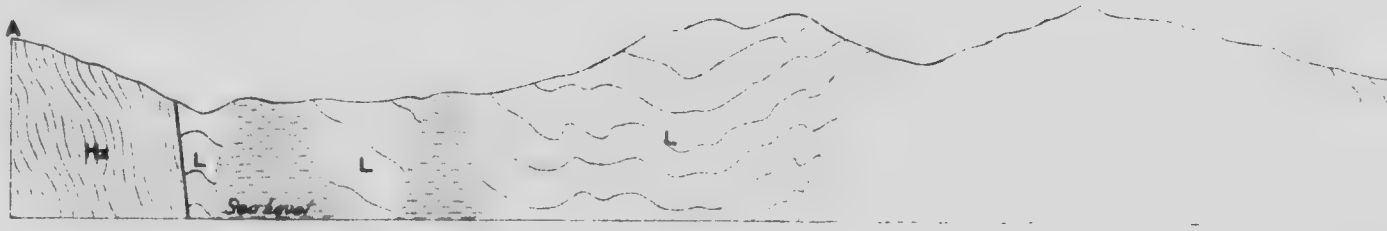
Glacial striae

Note. *Structure of Hozomeen series, shown in section, merely diagrammatic*

Localities of chemically analyzed rocks, shown thus +1441



Topography from surveys made by the Boundary Commission.



GEO

50′ 45′ 40′

STEM

Castle Creek

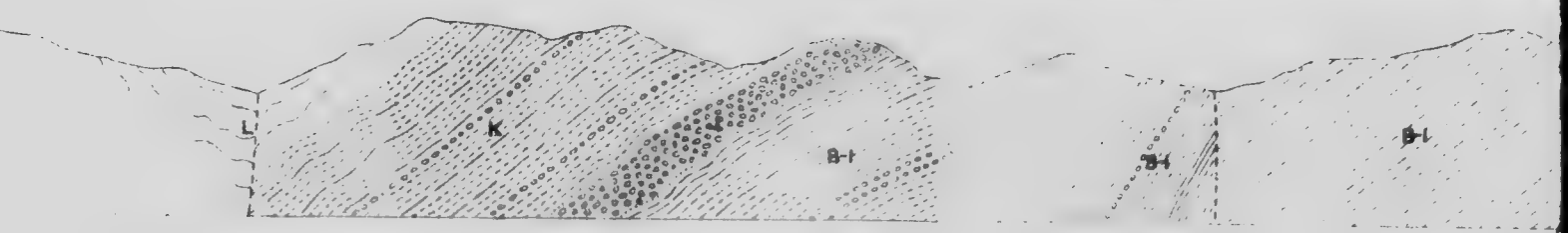
B-I

MT. FROSTY

INTERNATIONAL BOUNDARY

WASHINGTON

50′ 45′ 40′



Section along line AB

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R.A. Daly.

Scale 1/62500 — 0·9864 Statute Miles to 1 Inch

Miles

1 ½ 0 1 2 3 4

Contour interval 100 feet

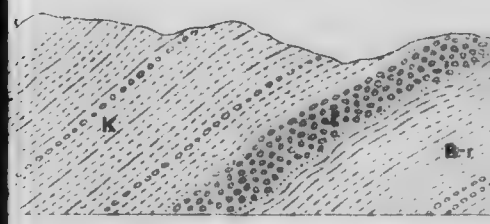
45′

Castle Creek

INTERNATIONAL

H L N

45′



Section along line AB

THE FORTY-NINTH PA

Scale 1/62500 — 0·9864 Statute Miles

Miles

1 0 1 2

Contour interval 100 feet

40′ 35′ 120°30′

Churchhumanten Creek

B-1

B-1

B-1

SHEET 15. SKAGIT RANGE

ERRATUM

Boundary Monument 59 is 1.02 miles west of Mon 60

LEGEND

PLEISTOCENE & RECENT

Glacial drift and alluvium

OLIGOCENE(?)

Skagit volcanic formation
liparite tuff

Skagit volcanic formation
andesite flows and pyroclastic deposits

CARBONIFEROUS

Ch

Chilliwack series
locally argillite and sandstone

(?) CARBONIFEROUS

Hz

Hozomeen series
cherty quartzite, greenstone, phyllite, and limestone pods

Intrusive

MIOCENE(?)

Chilliwack batholith
granodiorite
Granite at Skagit River

Monzonite
stock and dikes

JURASSIC(?) (?)

Harzburgite

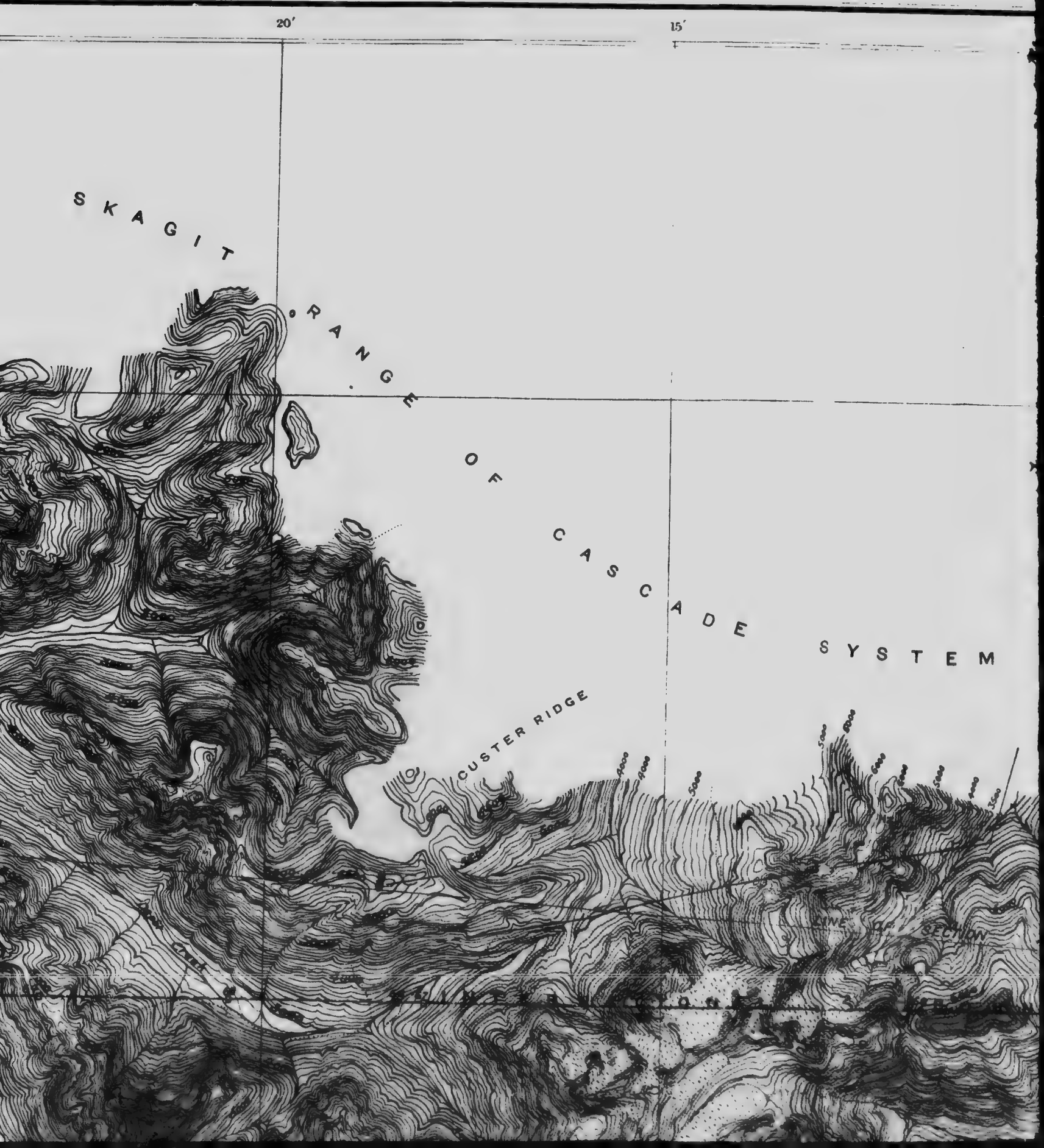
Custer granite gneiss
sheared granodiorite

Symbols

Geological boundary

Fault

Glacial striae


20′
15′
SKAGIT
RANGE
OF
CASCADE
SYSTEM
CUSTER RIDGE
LINE OF SECTION

10'

E

SYSTEM

5'
121°00'
49°
05'
HOZOMEEN RANGE
SKAGIT RIVER
B
49°
00'

MIOCENE

Chilliwack batholith
granodiorite
Granite at Skagit River

Monzonite
stock and dike

JURASSIC(?)

Harzburgite

Custer granite-gneiss
sheared granodiorite

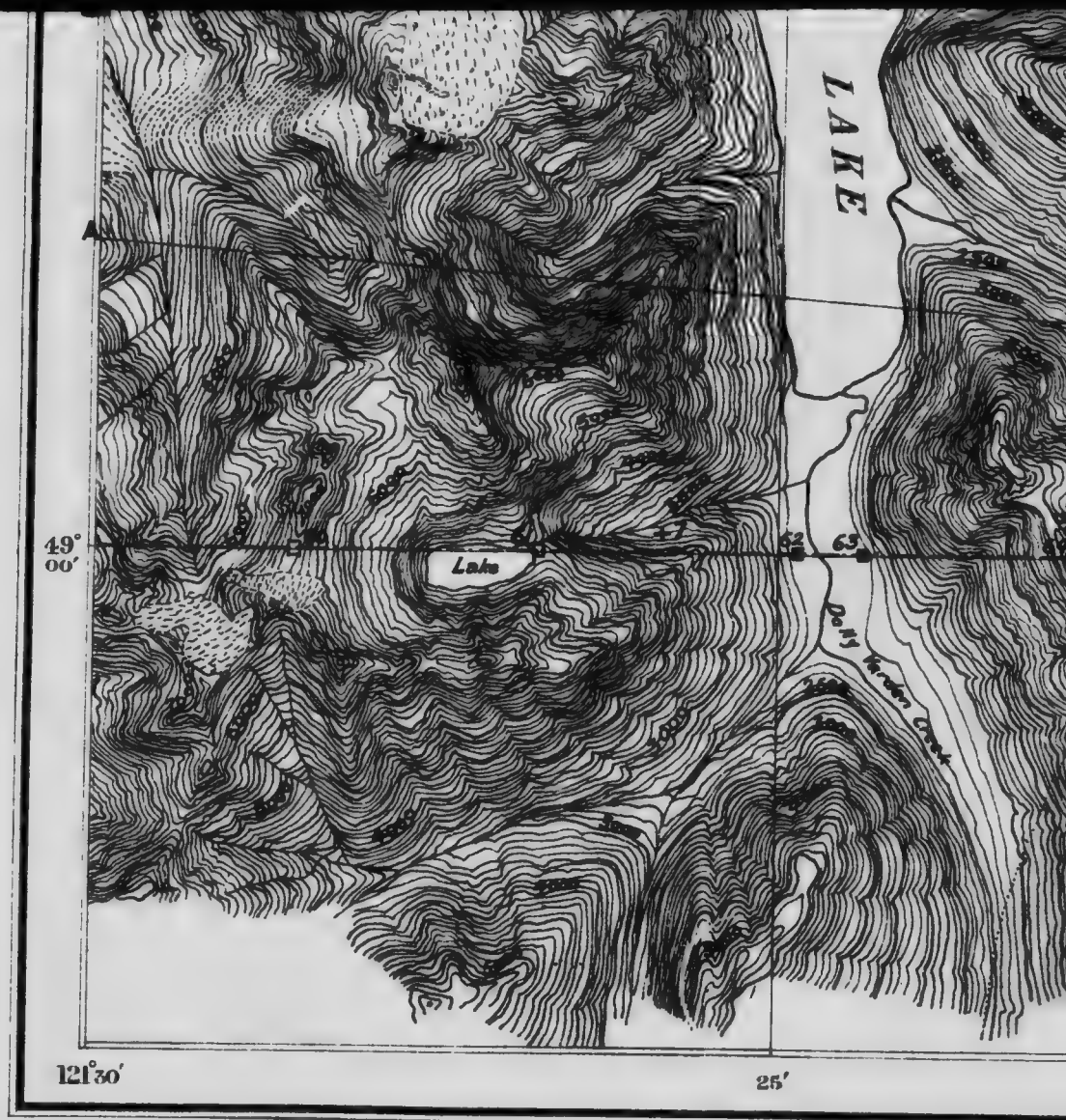
Symbols

Geological boundary

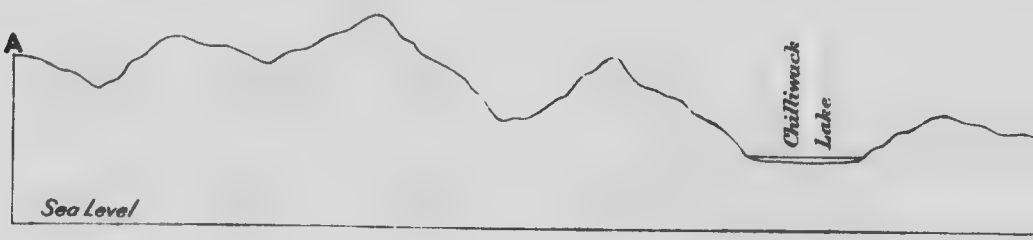
Fault

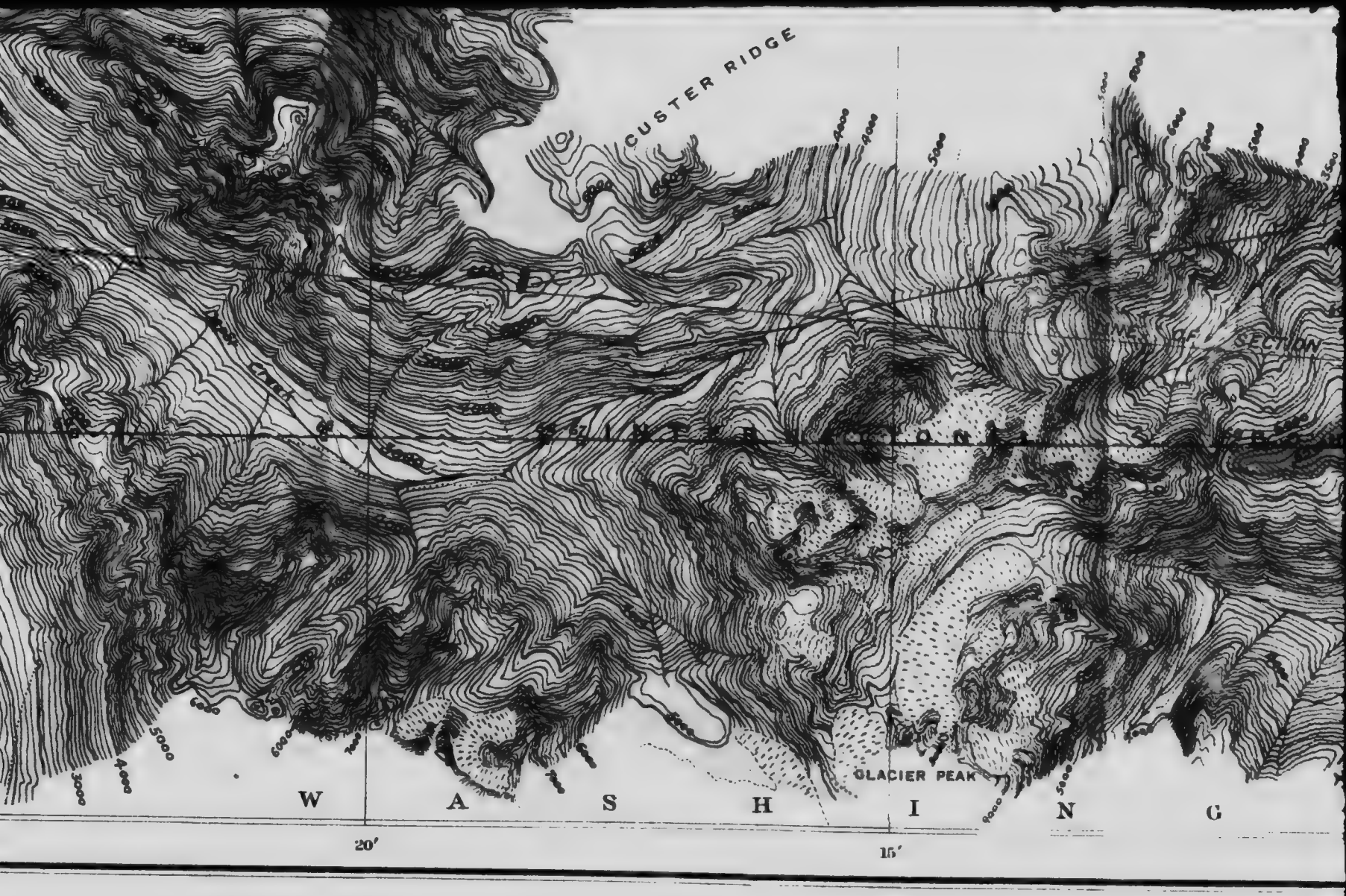
Glacial striae

Note. *Structure of Hozameen series, shown on section, merely diagrammatic.*
Localities of chemically analyzed rocks, shown thus. +7



Topography from surveys made by the Boundary Commission.





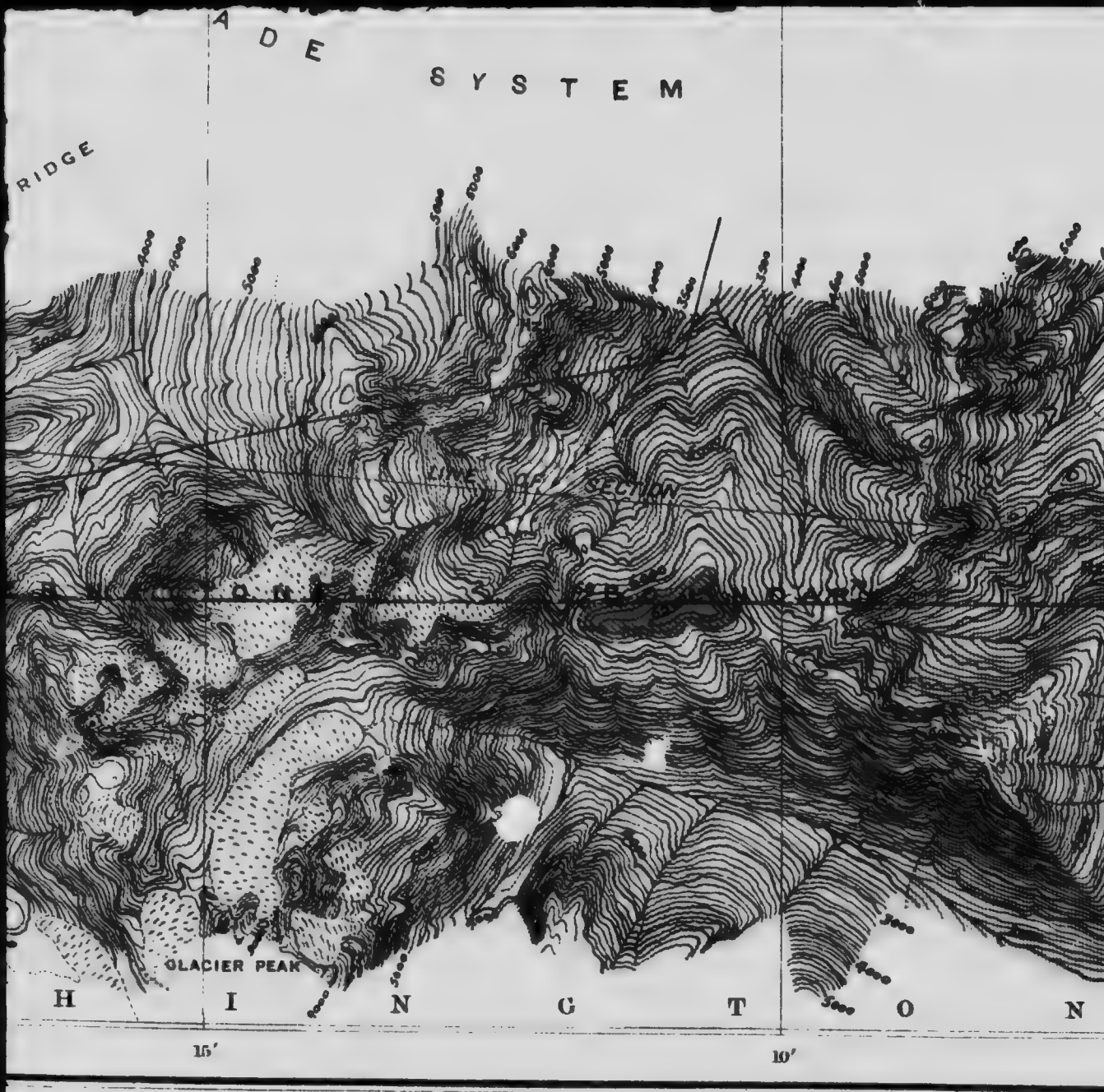
Section along line A B

GEOLOGY OF THE FORTY-NINTH PARALLEL. By R. A. Da

Scale: ~~62500~~ 1 — 09864 Statute Miles to 1 Inch

Miles 1 ½ 0 1 2 3 4

Contour interval. 100 feet



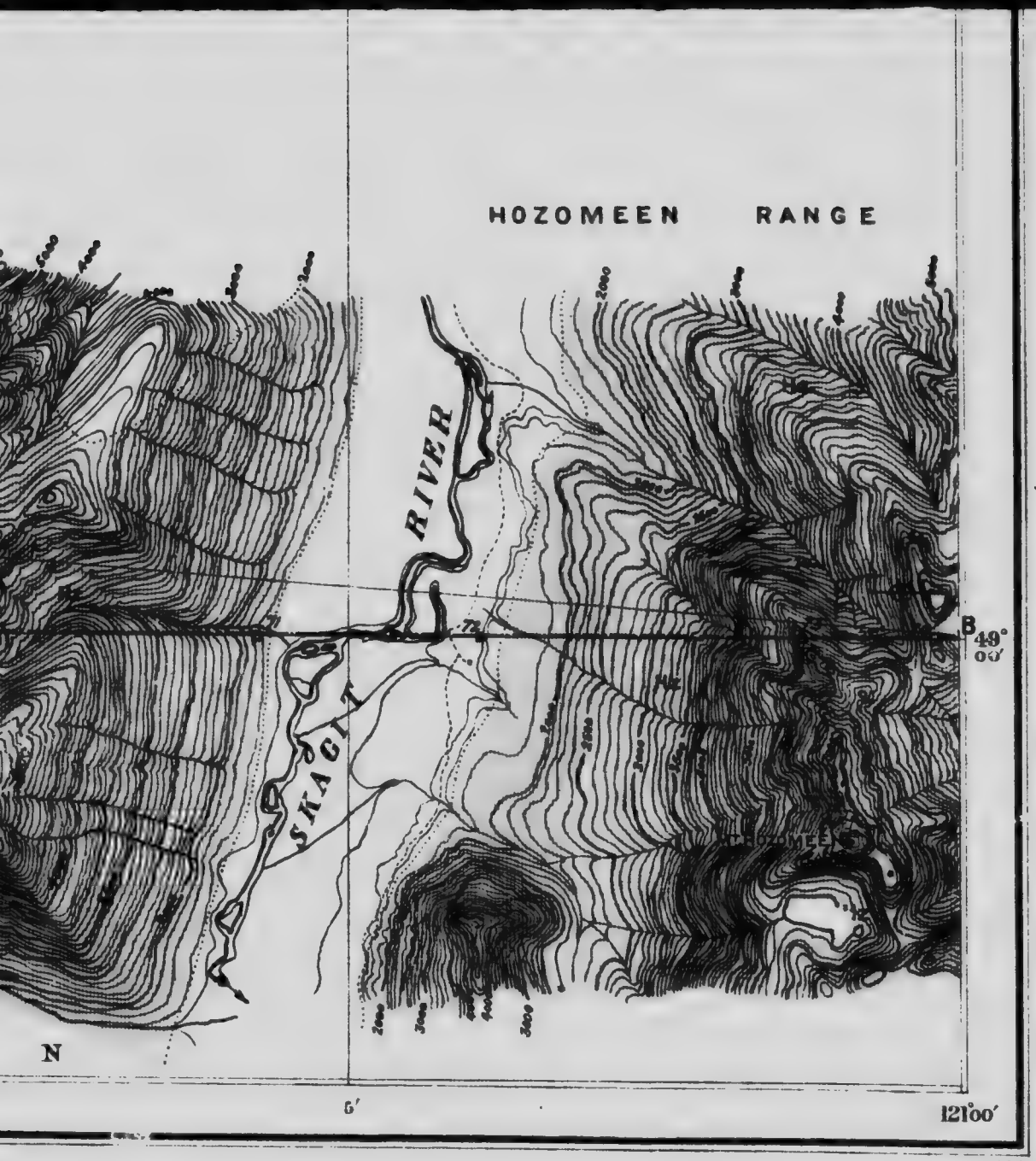
Section along line A B

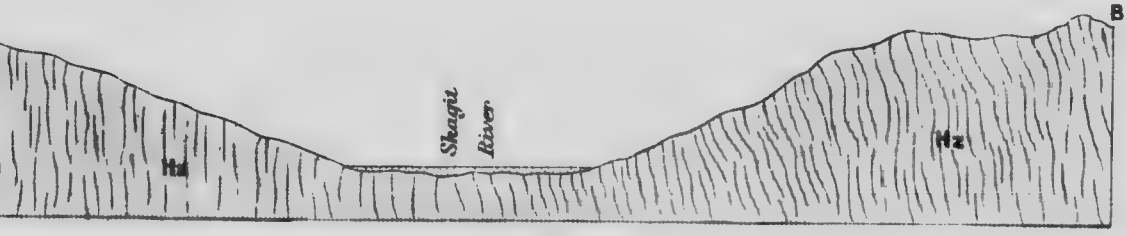
FORTY-NINTH PARALLEL. By R. A. Daly.

1/62500 = 0.9864 Statute Miles to 1 Inch

Miles 1 2 3 4

Contour interval, 100 feet





MAP 88A

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SHEET 16.—CHILLIWACK RIVER

LEGEND

(?) CRETACEOUS

Ta — **Tamihy series**
conglomerate, green and black sandstones, and grey shales

TRIASSIC

T — **Cultus formation**
dark grey to black argillite, with interbeds of grit, sandstone and conglomerate

CARBONIFEROUS

Cv — **Chilliwack volcanic formation**
chiefly flows of augite and hornblende andesites, with ash-beds

CARBONIFEROUS

Chilliwack series
outcrops of fossiliferous limestone

CARBONIFEROUS (and older?)

Ch — **Chilliwack series**
argillite, quartzitic sandstone, and limestone, with interbeds of grit and conglomerate

Intrusive

(?) MIOCENE

S — **Chilliwack batholith**
granodiorite, with gravitic phases

S — **Slesse stock**
diorite

(?) CARBONIFEROUS

I — **Vedder greenstone**

Symbols

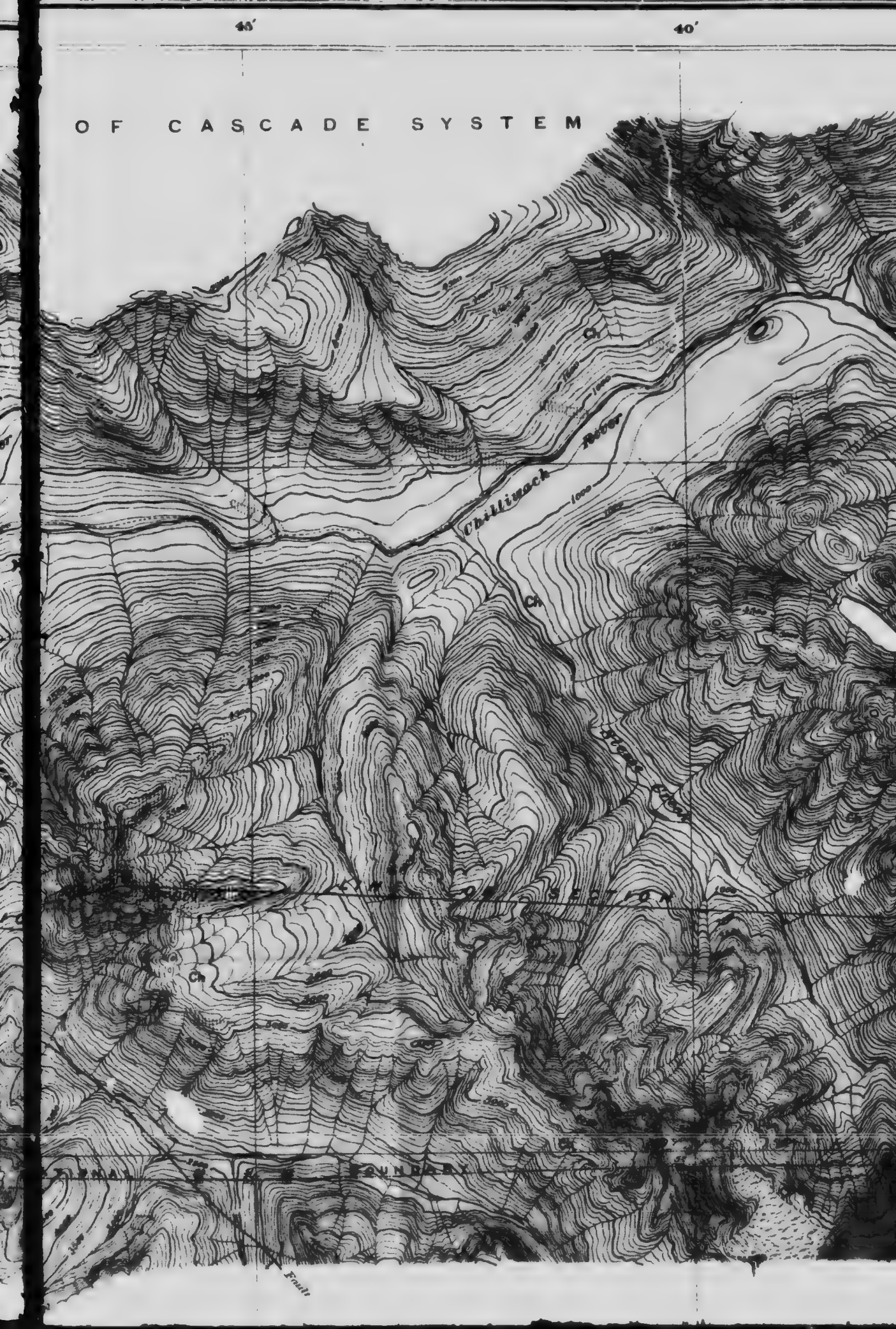
Geological boundary

Fault

Note: *Structure of Cultus formation, shown on section, merely diagrammatic.*

Localities of chemically analyzed rocks shown thus + 54

50'
40'
SKAGIT RANGE OF CASCADE SYSTEM
Ch
Chilliwack River
Fault


45'
40'
OF CASCADE SYSTEM
Chilliwack River
Ch
Ch
Ch
Fraser River
Fault

35′
121°30′
49°
05′
49°
00′
Ch
Ch
Ch

CARBONIFEROUS (and older?)

Chilliwack series
outcrops of fossiliferous limestone

Ch

Chilliwack series
argillite, quartzitic sandstone, and limestone, with interbeds of grit and conglomerate

Intrusive

MIOCENE (?)

δ

Chilliwack batholith
granodiorite, with granitic phases

Sloese stock
diorite

CARBONIFEROUS (?)

Vedder greenstone

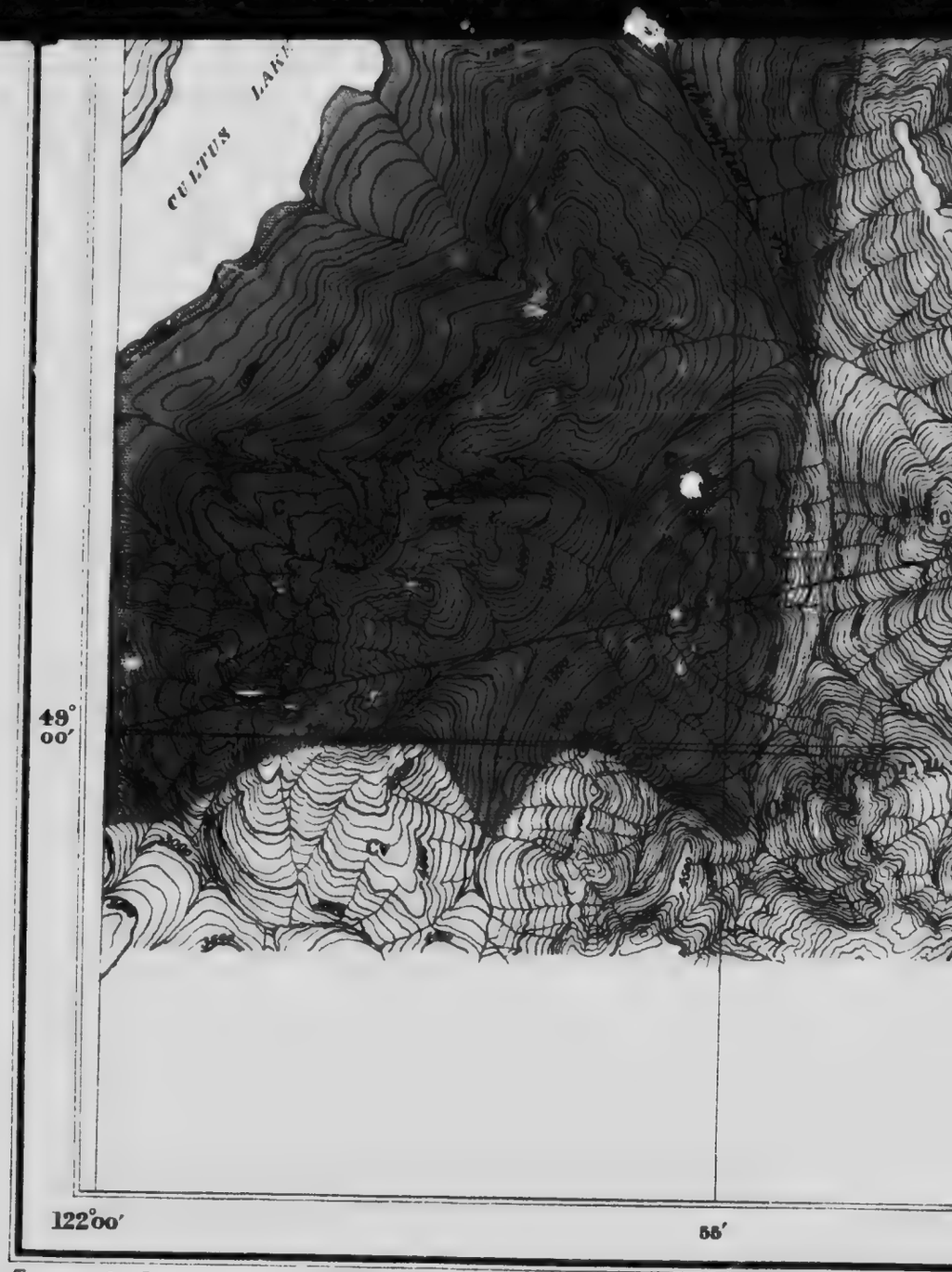
Symbols

Geological boundary

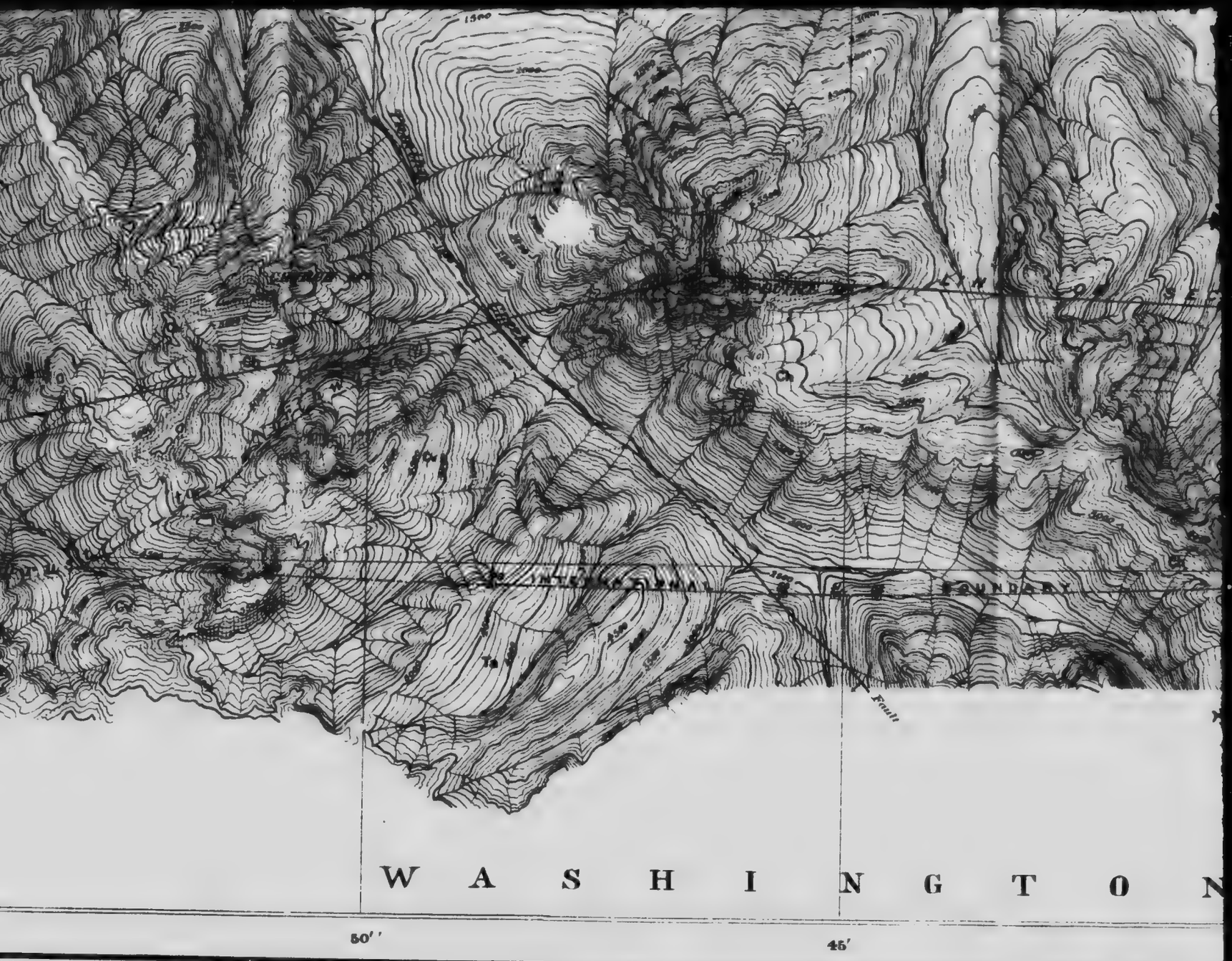
Fault

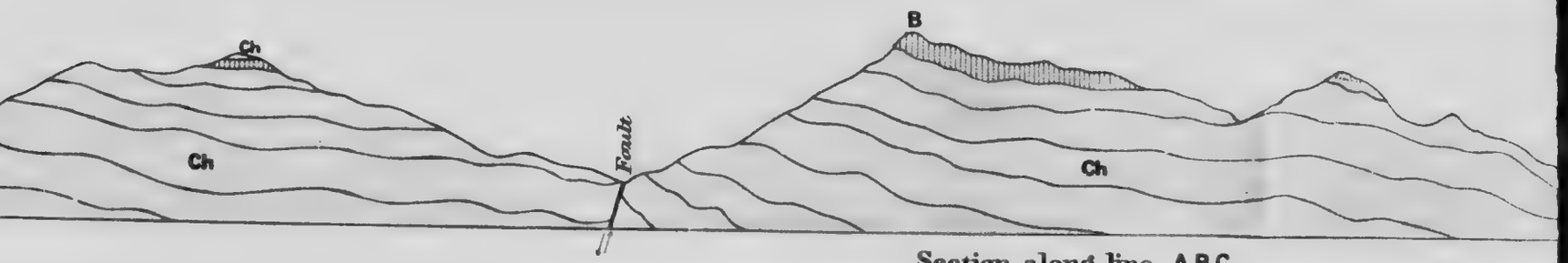
Note: *Structure of Cultus formation, shown on section, merely diagrammatic.*

Localities of chemically analyzed rocks, shown thus + 54



Topography from surveys made by the Boundary Commission





Section along line ABC

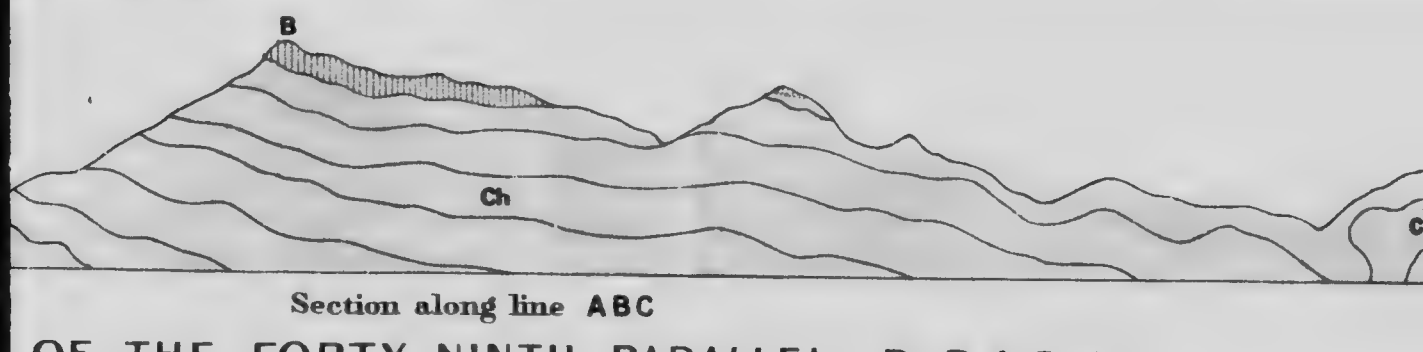
GEOLOGY OF THE FORTY-NINTH PARALLEL. By R.A.

Scale: 62500 — 09864 Statute Miles to 1 Inch

Miles

1 ½ 0 1 2 3 4

Contour interval 100 feet



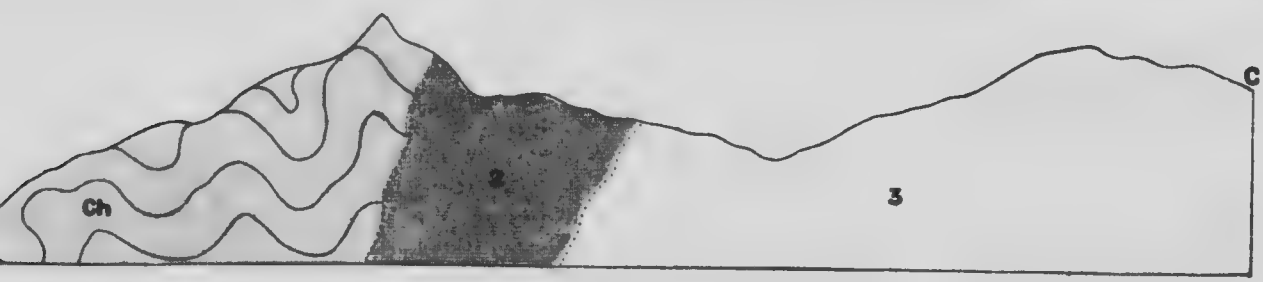
Section along line ABC

OF THE FORTY-NINTH PARALLEL, By R. A. Daly.

Scale: $\frac{1}{62500}$ – 09864 Statute Miles to 1 Inch

½ 0 1 Miles 2 3 4

Contour interval, 100 feet



MAP 89A

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SHEET 17. SUMAS LAKE

ERRATUM

Boundary Monument 19 is 0.94 miles west of Mon. 20

LEGEND

PLEISTOCENE AND RECENT

Alluvium and glacial drift
(north of Boundary Line)

(?) EOCENE

Hu

Huntingdon formation
sandstone, conglomerate, shale and thin coal-beds

TRIASSIC

Cultus formation
chiefly dark-gray to black argillite, with sandstone and fine-grained conglomerate.

CARBONIFEROUS (and older?)

Ch

Chilliwack series
argillite, sandstone and fine conglomerate (here unfossiliferous)

Intrusive

(?) JURASSIC

Sumas batholith
granite

Sumas diorite
cut by granite (plutonic breccia)

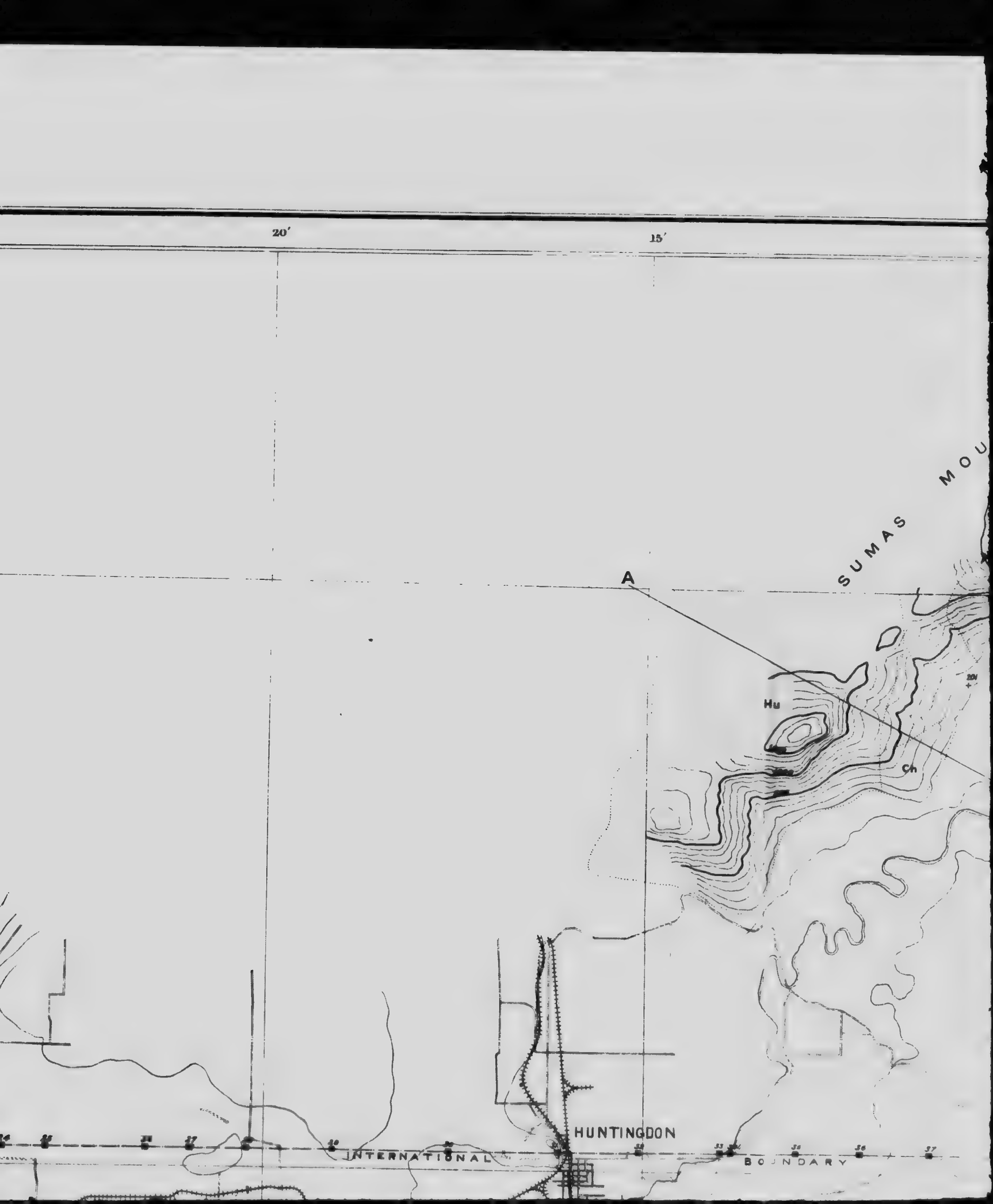
(?) CARBONIFEROUS

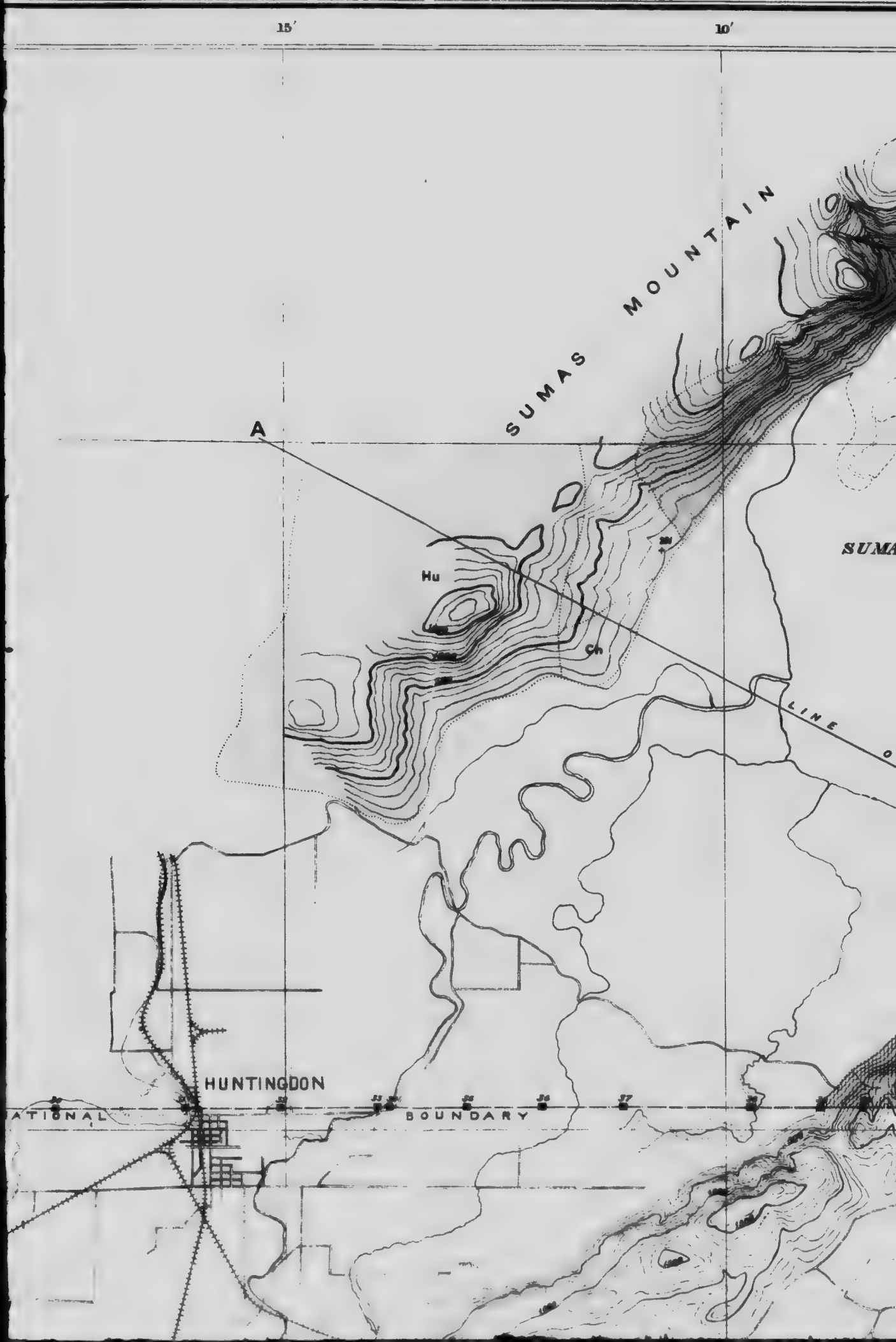
Vedder greenstone

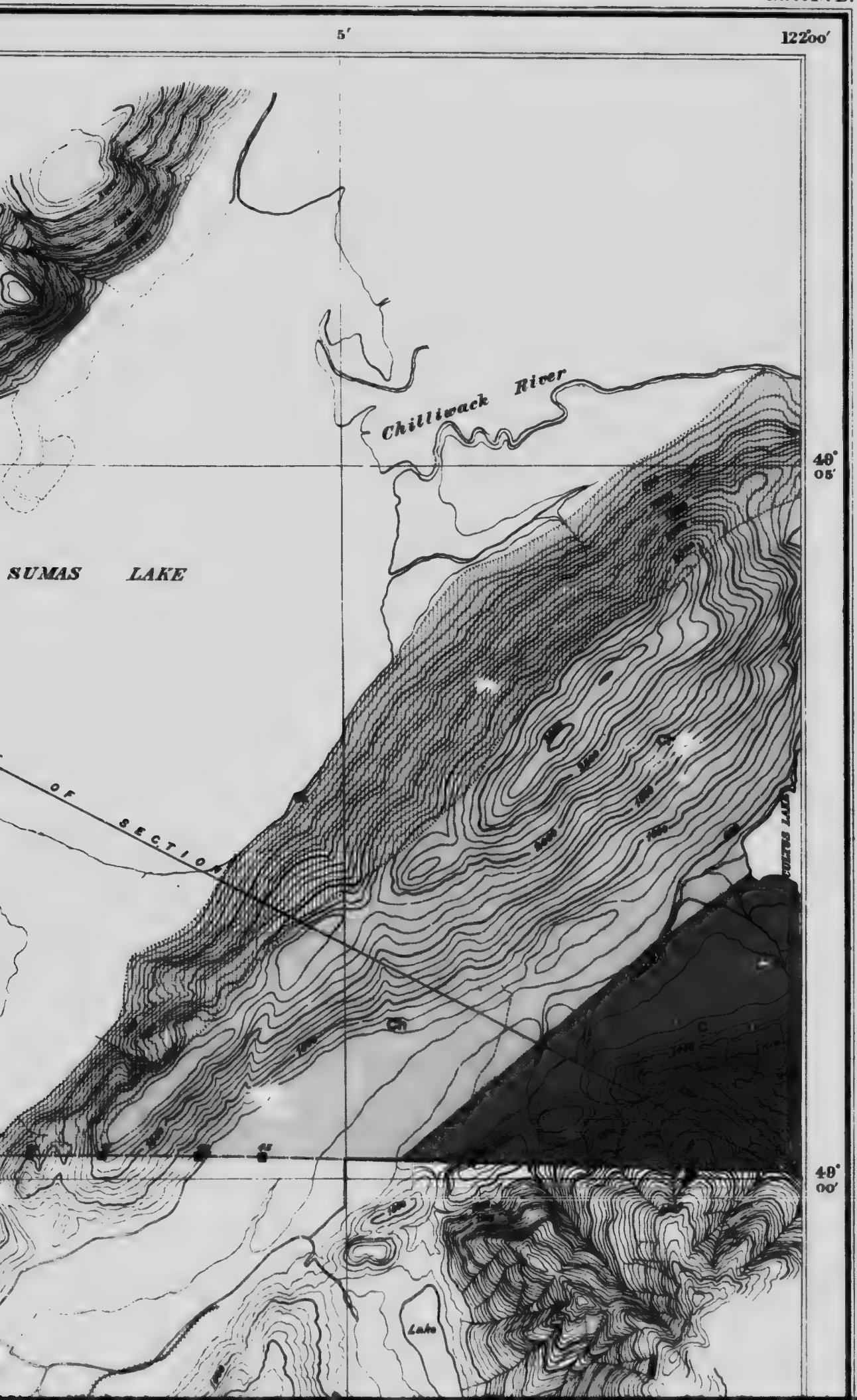
Symbols

Geological boundary

Fault(?)


20'
15'
A
SUMAS MOU
Hu
Ch
HUNTINGDON
INTERNATIONAL
BOUNDARY


15′
10′
SUMAS MOUNTAIN
A
Hu
Ch
SUMA
LINE
HUNTINGDON
ATIONAL
BOUNDARY


5′
122°00′
Chilliwack River
49°
05′
SUMAS LAKE
OF SECTION
49°
00′
Lake

Intrusive

Sumas batholith
granite

Sumas diorite
cut by syenite (plutonic breccia)

Vedder greenstone

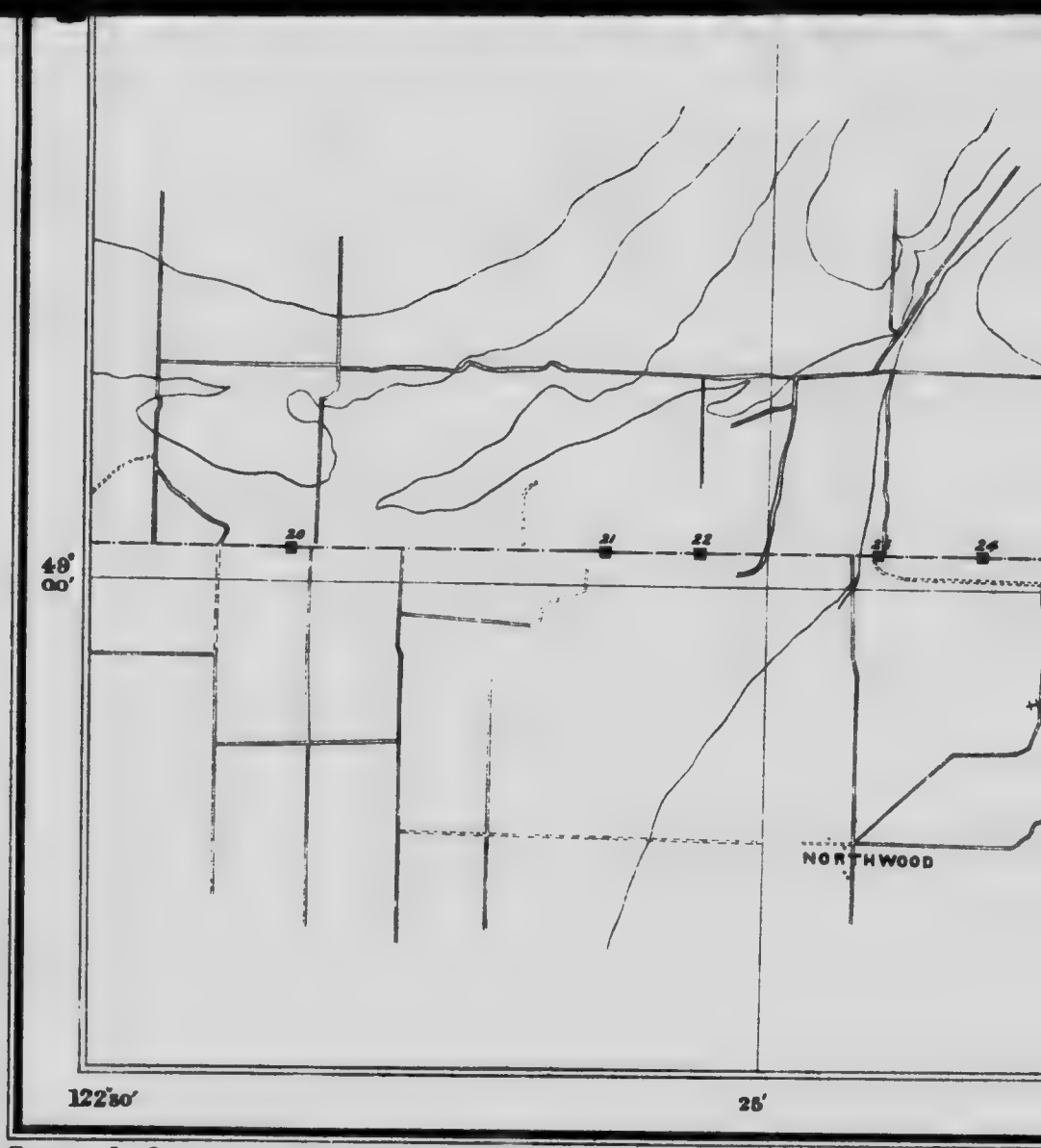
(?) CARBONIFEROUS JURASSIC (?)

Symbols

Geological boundary

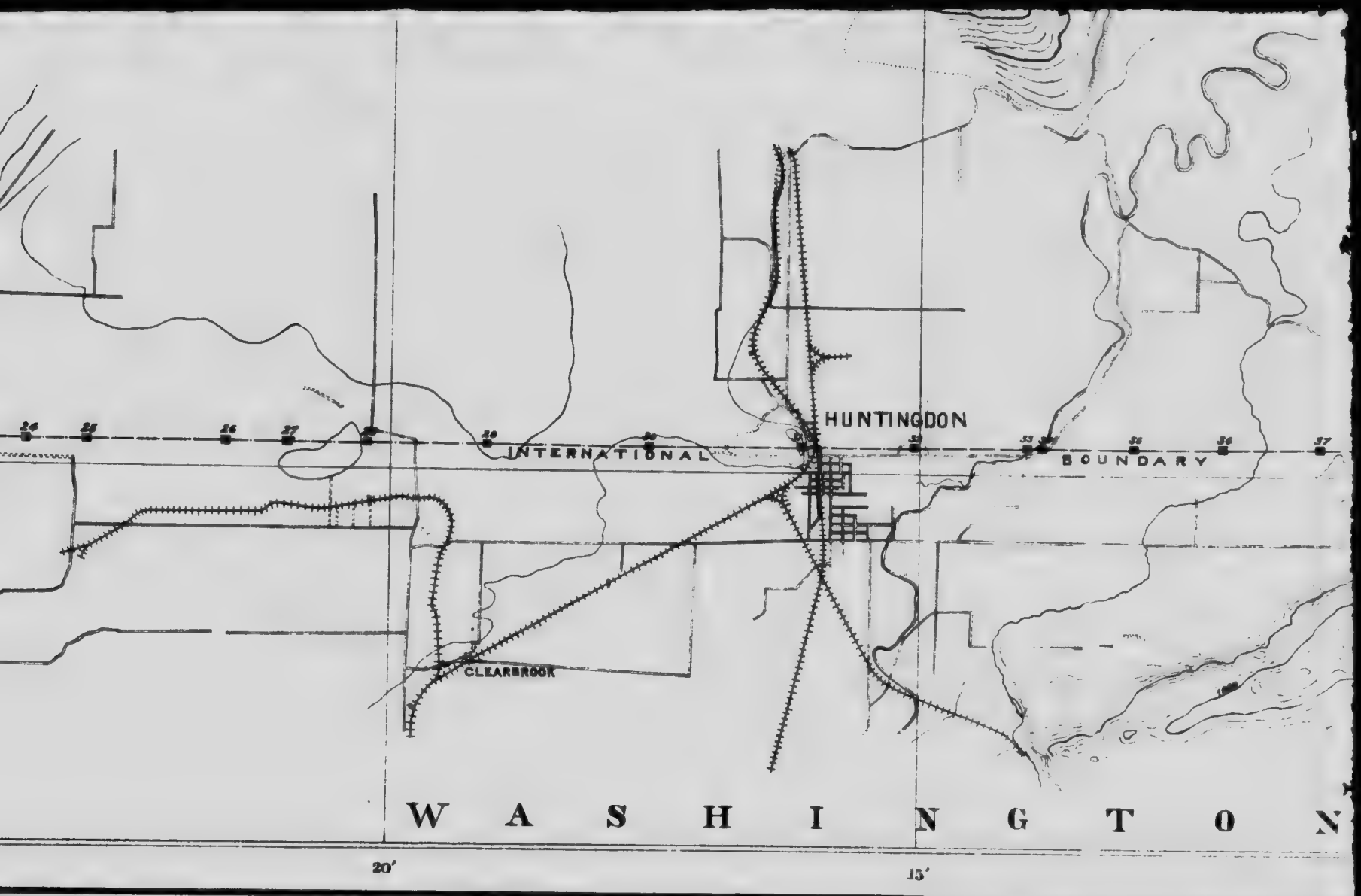
Fault(?)

Note. *Localities of chemically analyzed rocks, shown thus,* +201



Topography from surveys made by the Boundary Commission.

A
Sea level



Section along line A B

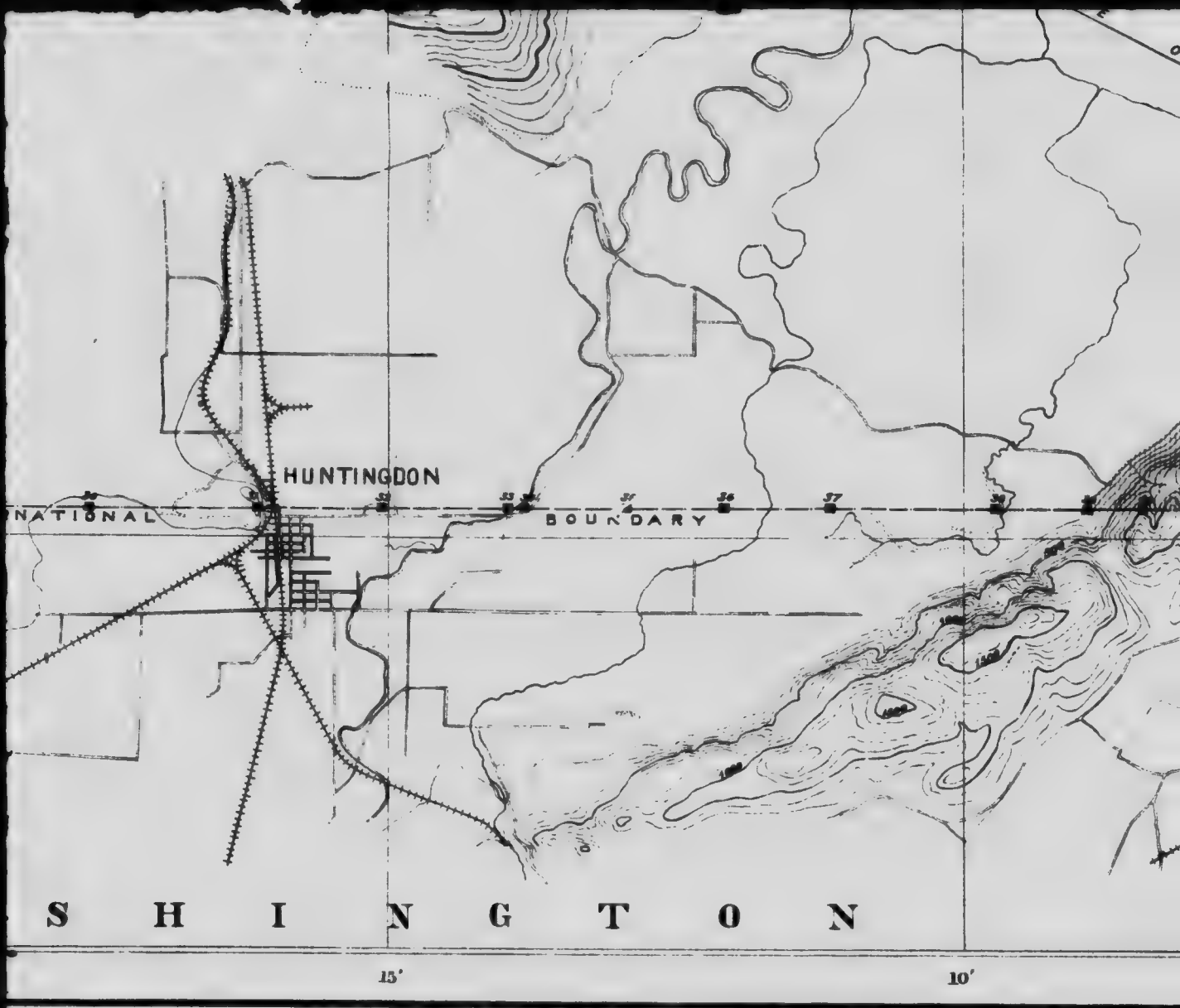
GEOLOGY OF THE FORTY-NINTH PARALLEL, By R.A. Dal

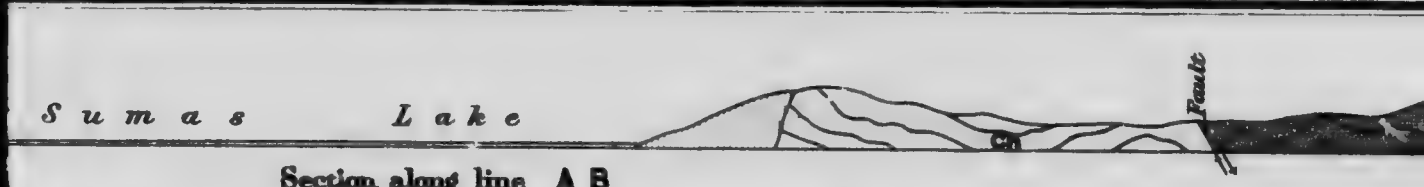
Scale: ~~62500~~ 1 – 0·9864 Statute Miles to 1 Inch

Miles

1 ½ 0 1 2 3 4

Contour interval, 100 feet





Section along line A B

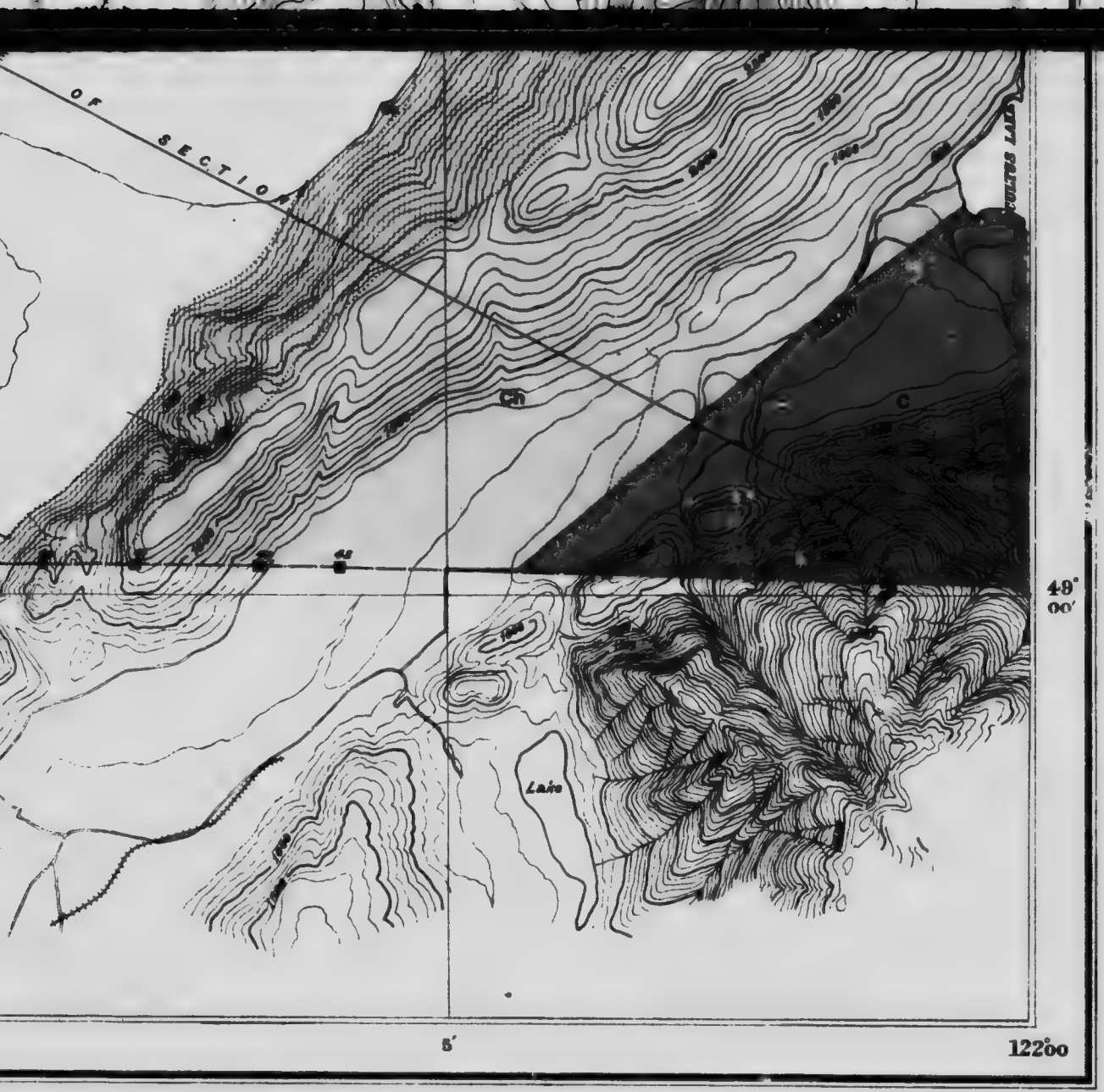
F THE FORTY-NINTH PARALLEL, By R.A. Daly.

Scale: 1/63360 = 0·9864 Statute Miles to 1 Inch

Miles

½ 0 1 2 3 4

Contour interval, 100 feet



MAP 90A

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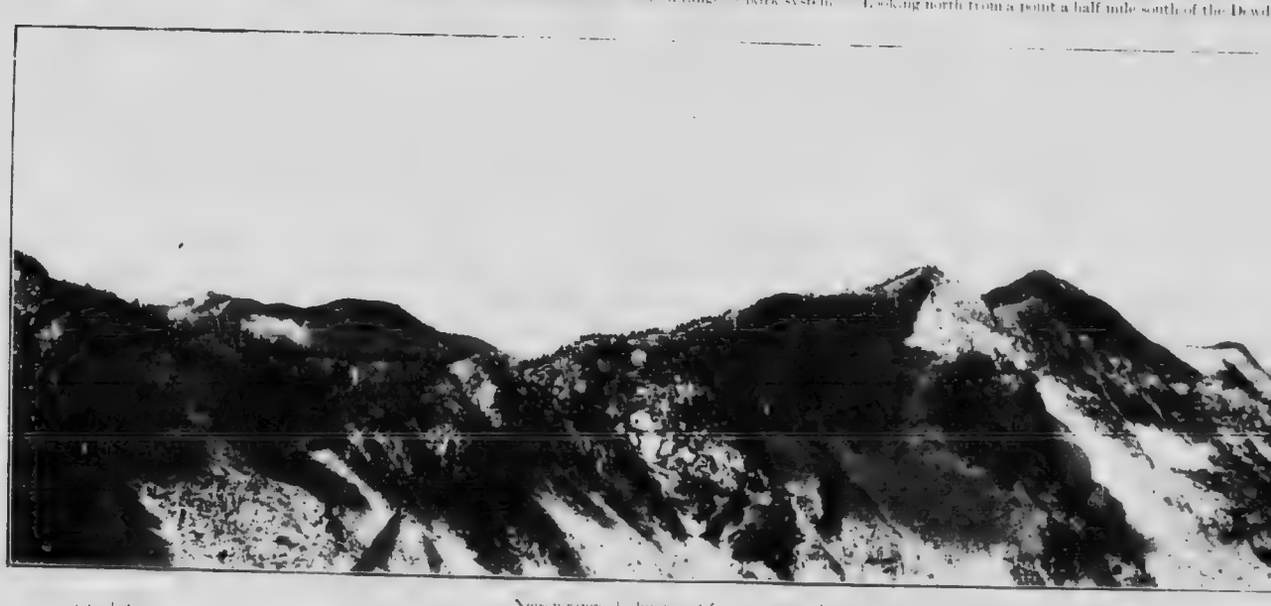
PLATE 72. VIEWS IN THE ROCKY AND SELKIRK RANGES.

Typical [illegible] Cirque range. Looking eastward from the [illegible] Starvation Creek. The slope in the [illegible] is composed of the S

Summit of the Nelson range [illegible] Bark system. Looking north from a point a half mile south of the Dewd



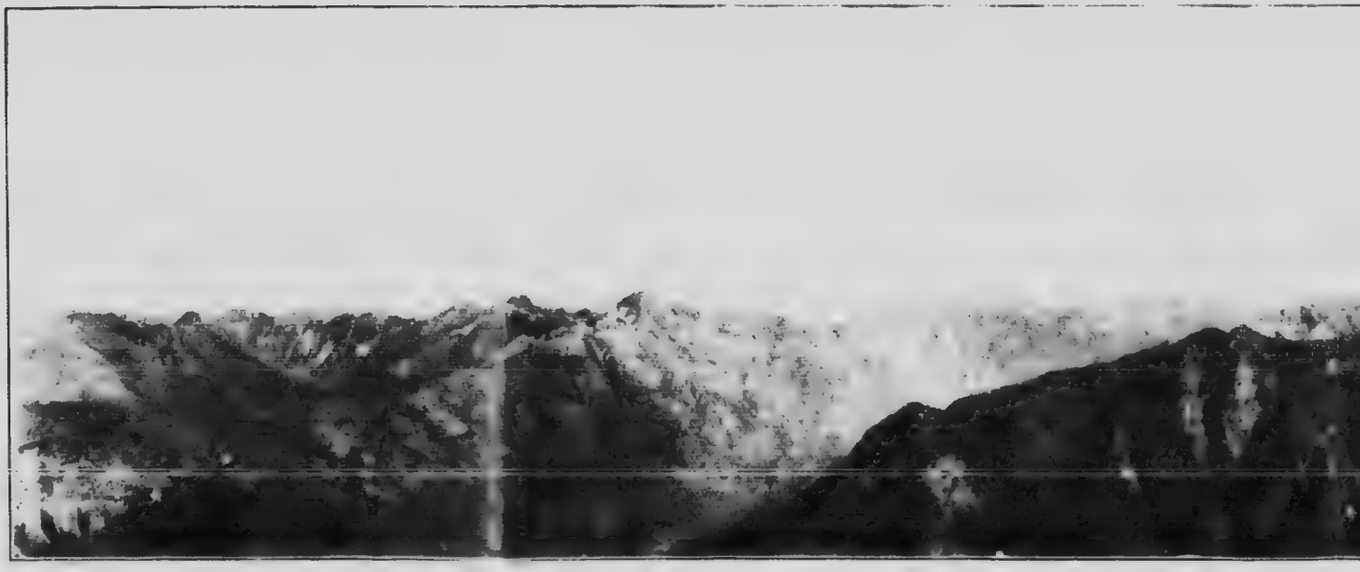
a pocket

Nelson range, looking west from summit ridge north of Dewdney trail. Ridges of near distance composed

PLATE 73. VIEWS IN THE SELKIRK, COLUMBIA AND CASCADE RANGES.

[illegible] and the Pend D'Oreille [illegible] Selkirk systems. Looking [illegible]

Typical view in the Midway Mountains. Looking northeastwardly across Kettle River [illegible]

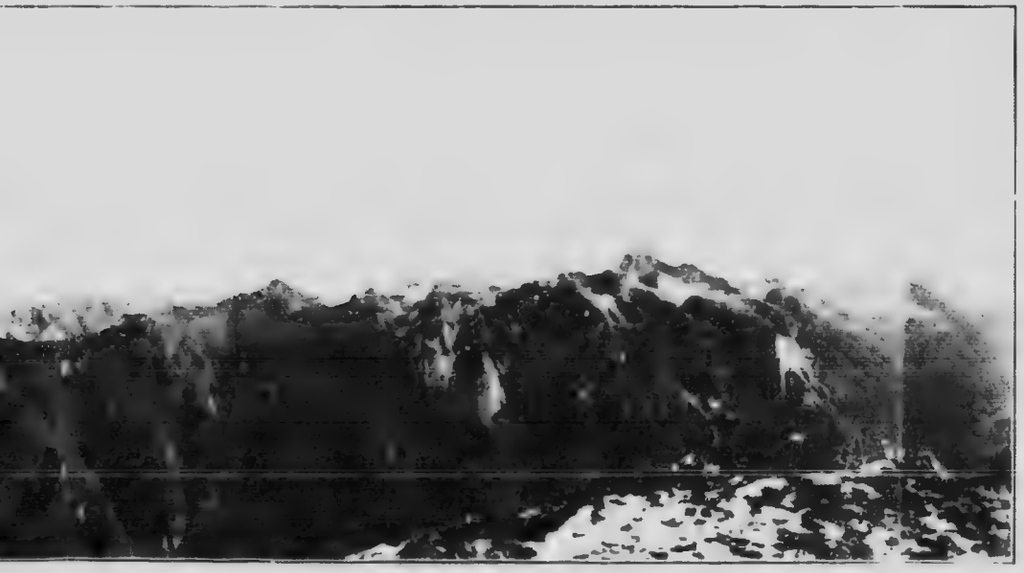


(In pocket.)

[illegible] view in the Skagit range. Looking east from divide between Middle and Slesse creeks. Chilliwack River [illegible]

king southwest from near International Boundary

ttle River near bridge six miles above Midway



ack River valley on the left. View shows accordance of summit levels.

FICHE 3 NOT REQUIRED